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# **THE AMERICAN JOURNAL OF CLINICAL HYPNOSIS**

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# The American Journal of Clinical Hypnosis

*The official Journal of the American Society of Clinical Hypnosis*

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## EDITORIAL

During the past few years more than a dozen "boards" have suggested to this writer his eligibility for—and some have even offered it without further ado—"certification" as a "diplomat" in "medical," "ethical," "psychological," "licensed," "analytical," "legal," "surgical," "instructional," "dynamic," "obstetrical," and "healing" hypnosis. Even an "Honorary Certification" as a "Diplomat in Dental Hypnosis" has been suggested and urgent requests have been received from various of these boards asking for favorable publicity in *THE AMERICAN JOURNAL OF CLINICAL HYPNOSIS*.

In appraisal of these boards, it can be stated that no one of them has more than a quasi-legal status as a qualifying agency. They were all originated and organized as purely private ventures by self-authorized individuals, and none had either the sponsorship or the approval of any legitimate scientific society. Purportedly, their purpose was, for a fee, to pass judgment upon the qualifications of members of professional societies and other individuals making such application. In some instances, false claims have been made repeatedly, usually by indirection and implication, of having been organized in conjunction with scientific societies or with the approval of The American Medical Association, The American Dental Association, or The American Psychological Association. Various boards have also used names suggestive of legitimate professional organizations in an effort to gain some degree of credit and prestige.

Aside from the question of their legitimacy, the usefulness or merit of these boards is most doubtful. They imply, without scientific validity, that there are different kinds of hypnosis, each requiring a separate certification. Comparable would be separate certifications in anesthesiology for orthopedic and for abdominal surgery, as if anesthesia were a different phenomenon for each type of surgery. They also imply with equal falsity that the hypnosis itself is the major consideration rather than the field of professional competence in which the hypnosis is used. All of this is needlessly confusing and misleading to people uninstructed in hypnosis, even those professionally trained in the healing arts. Hence the boards fail to constitute a contribution to a development of an understanding of scientific hypnosis. Rather they are an actual obstacle to the furtherance of scientific knowledge and acceptance of hypnosis.

Nor have these boards served—nor even given good promise to do so—to improve the teaching or the actual practice of hypnosis, nor even to secure its restriction to properly qualified persons. On the contrary, the boards have effected the opposite of their claimed purposes, as one could reasonably expect in the absence of laws excluding the layman from the practice of hypnosis. As a result of the well-intentioned but ill-advised attempt by medically trained persons to establish recognized boards before any actual need or use for such boards could be demonstrated, the charlatans quickly recognized that "boards in hypnosis" offering "certification" as a "diplomat" were a new and effective measure for the deluding of the general public.

At least a half dozen of the certifications mentioned above, purportedly issued by impressively named boards, can be secured by any applicant for a fee only. By a public educated to respect legitimate boards in medicine,

dentistry, and psychology, certifications by boards of hypnosis, whether displayed by the legitimate practitioner or by the charlatan, will be accorded equal value, to the detriment of science and human welfare and to the advancement of selfish interests. In illustration, an instance may be cited of a prospective patient who rejected his physician's certification in psychiatry in favor of "certifications" available at another address in "medical," "psychological," and "analytical" hypnosis purportedly issued by a national association for the advancement of hypnosis, but more probably by the holder's own printer.

That the professionally unqualified person can, so far as the public is able to judge, present credentials in hypnosis equal to, if not better than, those of the legitimate practitioner is most regrettable. The remedy lies not in continued competition with and encouragement of the charlatan by the enhancement of his wares. Nor does it lie in awaiting the eventual development of legal progress but in the simple recognition of hypnosis not as a specialty as the charlatan insists but merely as a scientific method variously used in the fields of medicine, dentistry, and psychology.

## THE HYPNOTIC CONTROL OF INTRACTABLE PAIN

by Paul A. Lea, Paul D. Ware, and Russell R. Monroe, M.D.<sup>1</sup>

The objective of this study was the possible use of hypnosis in the management of patients with chronic intractable pain. A review of the literature revealed many articles concerning the control of acute pain; however, there were only a few dealing with chronic pain (1-10). Most of the latter reported that it was possible to reduce or control chronic pain during the hypnotic trance but virtually impossible to control it post-hypnotically, particularly for any length of time. Two exceptions were the contributions of Harold Rosen, M.D., who attempted to obtain a psychological lobotomy through hypnosis (9), and Milton H. Erickson, M.D., who taught his patients positive and negative hallucinations in the areas of touch, deep sensation, and kinesthesia; body disorientations and dissociations; analgesia and anesthesia for both superficial and deep sensations; and time distortions (3). Our basic plan was to use hypnotic suggestion to alter the character of the chronic pain or to change the patient's attitude towards this pain. This was done by attempting to localize the pain in one pathological area with special emphasis on the fact that the rest of the body was normal or by suggesting that, as the patient learned to relax, the pain would not bother him as much. Only occasionally did we attempt to remove

the pain completely or to control it through the use of self-hypnosis and post-hypnotic suggestion. In part, this was based on the ideas of Wolff and Wolf, who stated that, although the threshold for perception of pain was relatively constant, the reaction to this pain varied between wide limits for a given individual—in fact, for the same individual under different circumstances (11). Anticipating that most of our patients would be suffering from cancer and would undoubtedly have many psychological problems as well as pain, we reviewed a number of articles on the palliative treatment of terminal cancer patients (1, 12-18).

### METHOD OF STUDY

This is a report on 20 patients with chronic intractable pain and includes all patients referred to us who persisted in seeing one of the authors three or more times, whether the results were successful or not. Six were referred by private physicians who heard of the project, three from the Veterans Administration Hospital, New Orleans, and eleven from Charity Hospital of Louisiana at New Orleans. Thus the majority were of low socio-economic status and often were of limited intelligence. Those referred by the private physicians were usually patients who had tried everything else. For example, one of the referrals had been seen by a general practitioner, ophthalmologist, chiropractor, three hypnotherapists, a psychiatrist, and two neurosurgeons. She had had a complete neurological workup, including myelograms, exploratory craniotomy, prefrontal lobotomy, and a partial section of the fifth cranial nerve.

The treating "physicians" were medical students who worked with the first ten patients between their sophomore

<sup>1</sup>This is a condensation of the senior thesis of P.L. and P.W. The work was done between the sophomore and junior as well as junior and senior years of medical school under a student research grant from the Tulane University School of Medicine Research Grant and the National Foundation Fund. R.M. was the faculty adviser who screened all patients and supervised the hypnotherapy. Associate Professor, Department of Psychiatry, Tulane University School of Medicine, 1430 Tulane Avenue, New Orleans 12, Louisiana.

and junior years and the second ten between their junior and senior years. Thus when they started the project, although they had had some intensive training in hypnotic induction techniques, they had had no experience in a doctor-patient relationship. One student assumed the physician's role while the other was an observer, either in the same room or through a one-way mirror. At times the supervisor was an added observer. In emergencies the alternate student might temporarily substitute as the physician-hypnotherapist.

The induction technique most often used was a modified form of eye fixation and relaxation, although as we became more experienced we found that varying our hypnotic and deepening techniques was desirable. At all times we avoided a command, authoritative approach, and at least one hour was spent introducing the idea of hypnosis as a possible method of controlling the pain.

Of the 20 patients studied, all but one obtained some level of hypnosis. Eight were considered to be light; nine, medium trances; and two, deep hypnotic states. The patients were seen from four to forty sessions of from forty minutes to one hour's duration. Actually, 12 of the patients were seen between four and ten sessions apiece, and only three were seen for more than 20 sessions. We defined our results as excellent, if the character of the pain was changed and all medication stopped; good, if the character of the pain was significantly changed, although some medication had to be continued; and a failure, if the character of the pain was not changed. Two of the 20 patients could not be evaluated clinically for extraneous reasons, and in one other instance we were not successful in inducing hypnosis (summarized in Table 1).

## RESULTS

Of the 17 patients who could be evaluated and who obtained some level of hypnosis, 12 showed definite changes in the character of the pain. We feel these results are quite significant, particularly when one takes into consideration the patient group as a whole and our relative inexperience in the doctor-patient relationship. Of the five failures, it was discovered later that one had been a morphine addict for 28 years and three of the four others had serious complicating psychiatric problems. The results summarized in Table I show that there were nine patients considered good results and three excellent.

## CLINICAL HISTORIES

### CASE 1

An example of an excellent result is Patient 10: D. S., 64-year-old white female. Diagnosis, malignant melanoma. Trance depth, deep. The terminal phalanx of this patient's left thumb was removed after a diagnosis of malignant melanoma, and the entire upper extremity was perfused with one of the nitrogen mustard compounds. At the time of referral, the patient had confined herself to her room (against her doctor's orders) and was experiencing pain throughout the left arm with accentuated pain in the amputated stump. The patient experienced a deep trance during the first session and reported she felt no pain while in the trance. She later reported an increase of six to eight hours of sleep in the following 24-hour period. The character of the pain was changed considerably during the next two sessions with localization in the thumb and forearm. At this time a post-hypnotic suggestion was given that the next day she might feel well enough to get dressed and go to the lobby for coffee with friends. Although she rejected this suggestion, the following day she reported less pain with localization in the thumb. The next day she not only went down to the lobby for coffee with friends but also went to a party that night and danced from 9:00 to 12:00. By the sixth session, therapy was discontinued because the patient reported only minor intermittent pain localized in the thumb. The following week she was also discharged by her attending surgeon. One-year follow-up: The patient is living and



well without recurrence of pain or malignant melanoma.

#### CASE 2

Another example of an excellent result, even though the patient was obtaining only a light hypnotic trance, is D. W., Patient 19: D. W., 67-year-old colored female. Diagnosis, multiple myeloma. Trance depth—light to medium. This patient has marked osteoporosis of the lumbar vertebrae and pelvis with progressive arthritic changes in both knees. The patient was being followed in post-radiation clinic with marked limitation of movement and pain in both knees and in the lower back, which made it necessary for her to use crutches. The first two sessions she was able to attain only a light stage of hypnosis. Because of this, we considered discontinuing therapy. However, the advisor suggested continuing therapy in order to evaluate the amount of relief that could be obtained through the use of light hypnosis. The patient came to the fourth session on one crutch and reported she had been walking without crutches much of the time at home. Because of the marked osteoporotic changes, she was told to use her crutches all the time and enjoy walking with less pain. Later, by altering our techniques and simplifying our terminology, the patient was able to obtain a medium trance and has been maintained at this level with only one 45-minute session per week. She has received no analgesic medications since her second session. Our immediate plans are to reduce the hypnotic sessions to one or two per month and to continue to control the pain in this progressive disease.

#### CASE 3

A third example, one of our failures, is Patient 17, whose pain was complicated by a severe psychiatric problem: E. H., 47-year-old colored female. Diagnosis, carcinoma of the right breast, ambulatory paranoid schizophrenia. Trance depth, light to medium. This patient was first seen in Tumor Conference three years after radical mastectomy, complaining of right chest pain located primarily beneath the operative scar. After a complete evaluation, the Tumor Conference felt this did not represent a recurrence and referred the patient to us for treatment of the pain. Prior to surgery, the patient had been seen in the psychiatric clinic at Charity Hospital in New Orleans and diagnosed as an ambulatory paranoid schizophrenic. Thus it was necessary to spend the entire first session alleviating this patient's fears and suspicions concerning us and hypnosis. During

the second session it was necessary to review much of the material covered in the first session, and hypnosis was tried without success. With the concentrated effort of both therapists, the patient was able to fluctuate between a light and medium hypnotic trance during the third session. At the end of the hour, the only suggestion made was that, as she learned to relax more, her pain would bother her less. At this time the patient seemed to be going deeper, and the therapist faced the dilemma of whether to continue the session for several hours in an effort to break down more of the patient's defenses or to stop at this point with the hope of developing the patient's trust and confidence. The latter was decided upon. The patient missed her following appointment; when contacted two days later, she said that her pain had increased considerably and that she had had to quit her job to come in for her appointments (which was obviously not true, since her visits were scheduled in her off hours). She stated that hypnosis offered her no cure and asked to discontinue therapy. This wish was granted, with permission to resume therapy if she so desired.

The patient's paranoid traits were very obvious throughout therapy, and we observed with interest that her reaction to hypnosis was diametrically opposite to that of Patient 1, also a paranoid schizophrenic, who was extremely over-enthusiastic about this procedure and was motivated to learn it in order to become superior to his fellows. Considering these two cases, we wonder if paranoid patients either reject hypnosis completely or react to it in a grandiose manner with an ultimate goal of using hypnosis to manipulate their environment.

#### DISCUSSION

As the study progressed, we had a number of surprising clinical impressions which can only be convincingly verified by a larger study and, in some instances, more controlled observations. However, these impressions were the consensus of at least two and often three observers. For instance, it seemed to us that more rapid progress was made with the patient if it was his idea to use hypnosis for the pain or if this had been suggested to him by his regular physician, who commanded a great deal of respect. This suggests to

us that the results would be even better if the hypnotherapy were conducted by the patient's own personal physician. A second observation was that, when post-hypnotic suggestions were given, the response seemed to be delayed for several hours or as much as a week. Our first impression was that these post-hypnotic suggestions failed, but as time progressed we became aware of the delayed response. Perhaps this was due to the passive, permissive, even vague way in which these suggestions were made.

We assumed that our success would depend upon the depth of hypnosis, but, to our surprise, we found that this was not necessarily the case. As a matter of fact, two of our best patients obtained only light to medium trances, and significant responses were noted in even the very lightest hypnoidal states. At the time this study was being done, other patients were seen for medical hypnosis. Again, it is our impression that the cancer group seem to respond particularly well, so we wonder if this is not related to the fact that they often utilize the defense mechanism of denial and are constantly grasping for any new and different procedure which will offer relief. Perhaps at the deepest unconscious level they imagine even a cure.

It would seem that the pain in our patients had become an integral part of their total life situation. It might be compared to a wheel, with the pain representing the hub about which the rest of the life's activities revolve. In several instances, it was essential that we understand the total life situation for the most successful use of the hypnotherapy, particularly to overcome the secondary gains of the illness. The more important the pain had become to the patient psychologically, the more complicated was the therapy. In fact, these patients were the ones who, by and large, required a greater

number of hours of therapy—e.g., Patients 1, 4, 11, 13, 16, and 18.

At times it was hard to decide whether benefit was actually being derived from hypnosis itself or such extraneous factors as the secondary gain a patient would derive from an unusual amount of personal attention from the hypnotherapist. However, we do not feel that it is important to make such a differentiation because, in our minds, hypnosis is essentially a doctor-patient relationship; and it is the intensity of this relationship which is being utilized when patients respond to suggestion, whether hypnotized or not.

We found that drug addicts are poor candidates for hypnosis, so that, if hypnosis is to be used, one should see the patient as early as possible. However, even if the patients are not addicted in the physiologic sense, most of them are psychologically dependent on medications for the control of their pain and hence fearful that any new procedure would deprive them of their drug. We circumvented this problem by reassuring the patients that our primary goal was to help them control the pain, regardless of how this came about, and that we would not take away their needed medications. Only after good rapport was established and a relatively deep hypnotic trance obtained was the idea implanted that less and less medication might be used, but it was always left up to the patient himself to guide us in this matter.

One positive side-effect to hypnosis was the frequency with which the nursing personnel spontaneously reported to us an immediate improvement in the patients' overall mental attitudes and behavior on the wards. They stated that the patients were more relaxed, less demanding of the personnel, no longer constantly asking for attention, and usually sleeping two to six more hours a night. This often occurred following the first induction procedure.



## PATIENT SUMMARY (FIRST YEAR)

Patient	Age	Sex	Diagnosis	Site of Pain	Trance Depth	Therapy Hours	Results
(1) E.W.	29	M	Post lobectomy; T.B., not active; paranoid schizophrenia	Right chest	Medium	40	Good
(2) W.D.	45	M	Hepatosoma	Low back and abdomen	Light	4	Failure
(3) D.I.	11	M	Reticulo-cell sarcoma	Low back	Medium	6	N.A.
(4) C.B.	63	M	Epidermoid carcinoma, morphine addiction	Jaw and throat	Light	10	Failure
(5) L.N.	38	F	Renal cell carcinoma	Tongue, left shoulder	Light	9	Good
(6) D.L.	73	M	Epidermoid carcinoma	Neck	None	2	Failure
(7) D.J.	65	M	Phantom limb pain	Both legs (amputated)	Light	4	Good
(8) B.C.	38	M	Post right lobectomy, psychoneurosis	Right chest	Light	7	Failure
(9) E.M.	69	M	Generalized carcinoma	Chest and throat	Medium	18	Good
(10) D.S.	64	F	Malignant melanoma	Left thumb	Deep	6	Ex.

## PATIENT SUMMARY (SECOND YEAR)

Patient	Age	Sex	Diagnosis	Site of Pain	Trance Depth	Therapy Hours	Results
(11) J.A.	46	M	Tuberculosis (inactive); post lobectomy & thoracoplasty; personality disorder	Right chest	Medium	12	Ex.
(12) G.D.	26	F	Decubitus	Back L-1 to L-3	Medium	7	Good
(13) J.M.	54	M	Spasmodic torticollis, psychoneurosis	Neck	Light	20	Failure
(14) J.B.	66	M	Cerebral vascular accident	Toes left foot	Medium	27	Good
(15) P.L.	23	M	Reticulo-cell sarcoma	Legs, low back	Medium	4	N.A.
(16) R.C.	26	F	Lupus erythematosus, depression	One joint each extremity	Light	19	Good
(17) E.H.	47	F	Breast carcinoma, schizophrenia	Right chest	Light	3	Failure
(18) F.H.	35	F	Von Willebrandt's disease, depression	Periosteal retroperitoneal	Deep	11	Good
(19) D.W.	67	F	Multiple myeloma	Low back and knees	Medium	11	Ex.
(20) E.F.	45	M	Undifferentiated carcinoma	Left arm and chest	Medium	6	Good

N.A. = Not applicable

Failure = Character of pain not changed

Good = Character of pain was changed

Ex. = Character of pain was changed; all medications stopped

## SUMMARY

Twenty unselected patients with chronic intractable pain were referred for treatment by hypnotherapy. Only one of this group did not obtain at least a light hypnotic trance, and two others could not be evaluated for extraneous reasons. Of the remaining 17, three improved sufficiently to be taken off all medications and nine significantly improved, in that the character of the pain was changed and less medication was needed. Of the five failures, four had severe complicating psychiatric problems.

A somnambulistic trance was not necessary with the technique we used; often as much was accomplished with medium or even light hypnosis. Responses to post-hypnotic suggestions were delayed from several hours to as much as a week.

It is desirable to work with patients

before pain becomes so intense that heavy sedation or narcosis is necessary; but, whether patients are physiologically addicted or not, one should not threaten to take away their medication.

The chronic pain of these patients becomes an integral part of their lives, so that one has to understand the total life situation to use hypnosis effectively, as the patient often has considerable secondary gains from his illness.

It is difficult to know exactly how much benefit is derived from hypnosis itself or how much from such extraneous factors as extra personal attention. In either case, this represents an intense doctor-patient relationship, which considerably enhances the patient's suggestibility. Nevertheless, it is our impression that hypnosis is a useful adjunct to medical therapy in the control of chronic pain.

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## HYPNOSIS AS THE SUBSTRATUM OF MANY DIFFERENT PSYCHOTHERAPIES

by Galina Solovey, M.D., and Anatol Milechnin, M.D.<sup>1</sup>

From immemorial times, empirical procedures have been employed for the purpose of healing, according to the beliefs and customs of tribes, peoples, and civilizations. Thus wise men of different eras have resorted to exorcisms, rituals, sacrifices, revelations of oracles and astrologists, fasting, administration of the most varied and fantastic concoctions, smearing with the excreta of animals, etc.

Many of these ancient procedures have lasted till our days, and new ones have been added which differ in form but not in essence. They are used by quacks, physicians, psychotherapists, priests, and others in agreement with their own and their patients' convictions and preferences.

Following certain contemporary tendencies, there are physicians who find it correct to treat a phobia related to horses in a five-year-old child by explaining to it that his fear does not really refer to horses, but to the possibility that its father might castrate him on discovering his unconscious desire to have sexual intercourse with his mother. It is expected that such explanations will lead the boy to imagine that he will marry his mother, and that his father, now turned into a grandfather, will not castrate him but give him a larger and better penis. This conviction will, in the opinion of these physicians, bring about the disappearance of the child's phobia.<sup>2</sup>

<sup>1</sup> Authors' address: Casilla de Correo 1561, Montevideo, Uruguay.

<sup>2</sup> This example, briefly outlined, is nothing else than a procedure of Sigmund Freud, described in 1909 in the article, "The Analysis of a Phobia in a Five-Year-Old Boy" (1). In a recent book Pearson (2) recommends it as a "model for all psychoanalytic therapies of phobias in children."

Other psychotherapists cure by means of the interpretation of the patient's dreams according to preconceived notions.

There is practically no doctor today, practicing any specialty, who does not make extensive use of the most varied placebos,<sup>3</sup> administering them with precise instructions, carefully adapted to the patient's needs. These placebos, like the concoctions of old, exert powerful effects, not only alleviating pain and discomfort, even of an organic nature, but also causing secondary effects, which appear to be toxic, allergic, etc. (3).

No less surprising is the fact that the direct pharmacological action of drugs on the patient's organism may be reinforced, weakened, or nullified by the interpersonal relationship between physician and patient when the drug is given with the inevitable accompaniment of explanations, rationalizations, direct and indirect suggestions, etc. It thus happens that a certain product or method of treatment is considered to be extraordinarily effective by some physicians and completely useless by others. This may well be the reason why there is an enormous variety of resources for treating certain disorders, as in the case of enuresis, where more than 500 drugs and devices are recommended for its treatment (4).

An observation of Stewart Wolf and collaborators (5) illustrates very clearly the fact that drugs may have dia-

<sup>3</sup> The placebo is defined in the American Illustrated Medical Dictionary (Dorland, 1951) as "an inactive substance or preparation, formerly administered to please or gratify a patient, now also used in controlled studies to determine the efficacy of medicinal substances."

metrically opposite effects on the gastric function according to the emotional condition of the patient when they are administered. These research workers found that Urogastrone reduced the secretory functions of the stomach in a patient with gastric fistula when this person was in a state of tranquility and relaxation but intensified this functioning when he had been previously irritated.

Another of their experiments consisted in giving the emetic drug, ipecacanha, to a pregnant woman who suffered from vomiting, while they brought about in her a tranquil emotional condition, with the assurance that her vomiting would cease, as it really did after 20 minutes.

An original analgesic treatment through indirect suggestion was employed by Dr. Golden (6) in 300 patients who suffered intense pain, in many cases during several weeks or months, and even with evident organic causes, such as acute pleurisy or a peptic ulcer. This procedure consisted in inserting in the sore area a hypodermic needle attached to an empty syringe, without telling the patient that this "injection" would eliminate his pain. Instead, the physician whispered to the nurse, in a voice audible to the patient, that he was giving an extraordinarily powerful drug, which was bound to make all pain disappear within one or two minutes in 90 percent of the cases. Later, watch in hand, the doctor asked the patient repeatedly how he felt. As a rule, after 30 seconds the patient declared that he was better and after two minutes that he was feeling no pain whatever. In half of the cases, the analgesia lasted 24 hours after the experiment, but in some cases it persisted for several weeks and, exceptionally, even for months.

In another study, K. Proniaeva (7) gave really active analgesic drugs to 130 women in labor, taking the utmost care to do so in a formal manner, with

deliberate exclusion of all kind of influence on the psychological state of the woman, that is, with no preliminary explanation of the significance of the treatment applied. The analgesic results were very poor, as may be seen from the following figures in a five-point scale where number five represents an ideal analgesia and zero, a complete failure:

5: 7.6% 4: 15% 3: 31% 0: 46%

On the other hand, during a congress of obstetricians and gynecologists in Erevan in September 1939 (8) a method of painless childbirth, consisting in the application of cupping-glasses in the zones of Sneiguirev-Head, was reported to be most efficacious, with the following results according to the same scale:

5: 47.5% 4: 40.5% 3: 6.9% 0: 4.8%

The use to a great extent in the Soviet Union of the famous "psychoprophylactic procedure for painless childbirth" revealed some very interesting facts. In the National Gynecological and Obstetrical Congress held in Kiev in February 1956 with the attendance of those who created the method for the purpose of analyzing its results in the course of a five-year period, it was concluded that the fundamental factor for the success of this procedure was the suggestive action.

Thus Prof. Konstantinov (9) declared that "it was not understandable why women physicians, with sufficient knowledge about the psychology and the mechanisms of parturition suffered pain during delivery . . .", adding that "it is not possible to obtain painless delivery by means of the description of the process of childbirth: the idea of a painless delivery can only be suggested . . . the best psychoprophylactic results were obtained precisely by the physicians who were able to suggest . . ."

In another report Academician A. Nicolaev (10) stated that "the psycho-

prophylactic method is above all a method of verbal influence over the woman, acting on her superior nervous activity through the second signal system . . . " Therefore, the method could be improved by "a considerable intensification of the elements of suggestion in all the interviews . . . and a more extensive use of the methodology of indirect suggestion . . . "

Very similar conclusions may be found in other reports, such as those of Prof. Lurie, Jordania, Petrov-Maslakov, and others. They all recognize the inefficacy of information imparted in a formal manner, which had been the basic element of the procedure till then<sup>4</sup>, and stress the need of insisting on an understanding, stimulating, tranquilizing attitude towards the patient, giving her, in one way or another, the suggestion that her delivery will not be painful.

Regarding suggestion in general, Jasper (12) puts it very clearly that the brilliant successes obtained since remote times with medicinal, electrotherapeutic, and other procedures were really due to the suggestive influence, of which physician and patient were often unaware. He adds that it makes no difference whether sweetened or colored water is prescribed, or whether an electric current is really made to pass or a mere pretense is carried out with great display of apparatus. The only important thing is that the patient should be convinced of the significance of the procedure.

At the end of the past century, Bernheim (13) recognized the role of suggestibility in chloroform narcosis. A mask with chloroform was applied to the patient and then, after he had inhaled once or twice, it was replaced with a mask soaked with some inactive liquid. In spite of the change the narcotic condition deepened.

<sup>4</sup>The basis of the procedure of G. Dick-Read (11) is identical.

Even such strong physical methods of treatment in psychiatry, as electric shock, insulin shock, medicinal prolonged sleep, etc., owe their success to the impact of the therapist's personality on the patient (14).

Doubtless both direct and indirect suggestions can only bring about healing when there is an adequate interpersonal relationship between the giver and the recipient. Regarding this Binger (15) says that the efficacy of a physician, his capacity to heal, depend fundamentally on such an adequate relationship. Therefore a new tool is to be added to the technical equipment of the physician: that expert understanding of mankind without which most of the medical resources, such as drugs, tests, medications, etc., fail.

\* \* \*

Both in ancient and modern times, bizarre, absurd, and apparently completely unfounded procedures<sup>5</sup> have succeeded in curing patients on innumerable occasions. Inert substances, acting as placebos, have even cured organic diseases. On the other hand, medical procedures of recognized efficacy and correct indication may completely fail to cure.

This clearly indicates that the curative principle of these varied resources does not lie in their intrinsic properties (or lies only in part in the case of active drugs) but *depends on the intensity and the nuance (of hope, optimism, etc.) of the emotional state which the physician, psychotherapist,*

<sup>5</sup> This understanding is relative, differing even among contemporaries of the same level of general culture. Thus the aforementioned case of treatment of a phobia in a five-year-old boy (1, 2) is seen by some as the discovery of a genius, and by others not only as bizarre and absurd, but even as the psychopathological action of a sexual maniac who should be in a mental hospital or as a criminal offense foreseen by the codes of practically all countries under the heading of corruption of minors.



*priest, or quack causes the patient to experience.*

Such an emotional state may be brought about either in an active or in a passive manner or by a combination of both in the most varied proportion. This may be assimilated to a direct induction of the hypnotic emotional state on one hand and the indirect induction of this state on the other hand (16).

In the active procedure, the therapist strives to act in accordance with the patient's need at the moment, revealing an understanding, cordial, accepting, reassuring attitude in some cases and an authoritarian one in others.

In the passive procedure, the operator is a mere screen, on which the patient projects the pre-suggestions related to the former's person, knowledge, therapeutic ability, etc., that is, all that constitutes the fame or prestige of the operator in a certain environment.

A therapist who has such pre-suggestions in his favor may apply varied and even absurd methods, since their success will be due exclusively to the psychological circumstances. For example, a famous doctor of the nineteenth century, Gruby, among whose patients were Chopin, Liszt, George Sand, and Dumas, obtained wonderful results in the treatment of rheumatism by prescribing bicarbonate pills to be taken three times a day after a long walk.

Being aware of the importance of prestige for the success of therapeutic suggestions, Kartamisiev (17) describes an original way of deliberately fabricating prestige in a dermatological clinic. The patient is seen successively by four physicians, each assuring him that his treatment is only preliminary and that the most efficacious procedure will be applied by the Professor. Such a preparation has given remarkable results.

Every physician is necessarily a psychotherapist who carries out a rela-

tionship-psychotherapy of the "positive-tranquilizing" or "negative-authoritarian" kind according to the case (18). The co-participation, cordiality, desire to help, etc., intelligently demonstrated by the doctor, give rise to the patient's confidence and make possible the achievement of effects of reassurance, persuasion, and so forth. As was rightly said by Chernorutski (19): "Whether the doctor wants it to be so or not, psychotherapy is inseparable from him, and it depends on the doctor what sort of a psychotherapy it will be."

Many physicians are not aware of the enormous importance of the psychological influence on the patient's organic functions, nor of the inevitable psychological significance of every interview between physician and patient. This psychological factor may determine whether the patient will cure, improve, remain stationary, or even suffer iatrogenic disorders. There is no doubt that, if special courses in psychology were given at the medical schools, the capacity to heal of the physicians would increase considerably, and the proportion of patients who resort to quacks would decrease accordingly.

Contemporary medicine is acquiring an increasing understanding of the influence of the mind over the body, and of the body over the mind. It is being stressed that psychology must not be opposed to physiology, but that both must be seen in an intimate relationship.

The psychological functions, particularly those related to affective life, are integrated, in terms of V. Bogomoletz (20) "in the chain of causes and effects that are decisive in our physiological functioning, our vigor or the decadence of our cells, and thus our health, our longevity and our happiness . . . The pleasures and the sufferings of man, his impulses, his imagination, his illusions, his fun, and his cre-

ative qualities have the utmost therapeutic importance. Recognizing this importance, we do not assume the functions of a fakir, a hypnotist, or a metaphysician, but carry out the most positive action which the science of man has been awaiting for fifty years."

We are convinced that one of the principal keys to the elucidation of the influence of affective reactions of different intensity and duration on the physiological processes, education, intellectual functioning, etc., consists precisely in the scientific study of the hypnotic emotional state. We mean the science of hypnotism that is just beginning to be developed and that has been defined by the authors (21, 22) as "the study of the psychophysiological condition of a person under the different emotional states of increased intensity." Thus understood, the hypnotic state constitutes "an integral part of our psychological living."

This concept regarding hypnotism has certainly very few points of contact with the hypnotism that V. Bogomoletz places scornfully between fakirism and metaphysics. Such an attitude towards hypnotism, expressed not only by that author but by a part of the official scientific world today, is understandable. Even at present, the literature on hypnotism is often so uncritical as to offend and to alienate the reader.

Strange as it may seem, the absurdities that surround hypnotism have been reinforced by a pseudo-scientific foundation that came from the asseverations of such famous personalities as Charcot, Pierre Janet, Pavlov,<sup>6</sup> and

others, based on the observation of some few psychopathological subjects or, in the best of cases, of people with extreme biotypes carefully selected from their clinics to act as a sort of "mediums" in their experiments.

The conclusions obtained from the study of such psychopathological or exceptional subjects were extended by these celebrated men of science to hypnosis in general. Thus, Pavlov (23) stressed "the almost irresistible power of direct suggestion;" Pierre Janet (24) insisted, at least in part, on "the automatic behavior of the subject, totally directed by the will of the operator;" Charcot (25) spoke of the pathological nature of the hypnotic state in general, warning against the considerable dangers to health and well-being that may result from having been led into this state, and other authors admitted the possibility of obtaining the most unlikely phenomena of behavior by means of direct suggestion (or of the word as the second signaling system) as well as the fulfillment of post-hypnotic suggestions after a very long period of time, even 20 years after the suggestion had been given.

These same concepts regarding hypnosis are reflected in the writings of the renowned Indian philosopher, Swami Vivekananda (26), who declares that Hindu psychology and religion are decidedly against the practice of hypnotism.<sup>7</sup> The hypnotic state is considered by them to be an unwholesome condition, in which the hypnotist, through the domineering power of his stronger will, drags down the subject, subjugating his mind, and finally practically deprives him of his soul.

Such unfounded asseverations created an erroneous view and attitude concerning hypnosis, which was widely spread by writers of police fiction, comic strips, and screen plays.

<sup>7</sup> In spite of the fact that the practice of Yoga is regarded by some as the achievement of relatively deep autohypnotic states.

<sup>6</sup> Pavlov made, perhaps unwittingly, an important contribution to hypnotism. Certain situations he created to obtain "conditioned reflexes" in hungry dogs were precisely the kind of situation that may bring about a sudden emotional state of considerable intensity. The psychophysiological changes that characterize this emotional state of increased intensity result in certain phenomena of behavior that correspond exactly to the phenomena of a deep hypnotic state in the opinion of the authors (22).

To all this we can apply to a certain extent the words of Alexis Carrel (27): "The more famous the specialist, the more dangerous he can be . . . Thus, great men who have contributed to human progress in a certain field, when speaking of things they do not understand well, cause regression in other fields."

\* \* \*

All the peculiarities of the attitude that leads to an ideal therapeutic interpersonal relationship are identical to the characteristics of the attitude that modern authors recommend for the induction of the hypnotic emotional state of the positive type (28). As Watkins (29) rightly says: "The induction of trance is therefore not largely a matter of technical manipulation but more a problem of understanding and interacting in an intimate interpersonal relationship situation."

Erickson (30) made a good comparison referring to the development of the hypnotic state within the psyche of the subject and the vital process that takes place within the egg, not being "produced" by external factors, but merely stimulated by the warmth of an incubator. Similarly, the development of the hypnotic state is stimulated by an adequate interpersonal relationship.

The induction of the hypnotic state, if this term may be used, consists in stimulating a person to intensify an emotional state either of the positive-tranquilizing or of the negative-disturbing type (22-31).

As has been said above, this stimulation may be achieved either directly, the operator actively providing an adequate attitude to the subject, or indirectly, the operator being completely passive, a mere catalyst of the pre-suggestions of the subject regarding the operator himself or his procedures (16).

The indirect way may be particularly rapid and spectacular in some cases.

A very illustrative historical example of this is the case of Mesmer, whose patients entered an hypnotic state without having seen him, while they waited in his consulting room holding iron rods. Even the most resistant ones reacted when Mesmer merely made his impressive appearance and touched them with his wand.

The direct and indirect procedures of "induction" of the hypnotic emotional state are likely to be found combined in therapeutic and experimental environments as well as in everyday life.

Naturally the intensity of the hypnotic emotional state that is obtained in different circumstances may differ considerably according to the situation, the environment, the individual traits of the subject, etc. (32).

The intensity of the hypnotic emotional state must be understood as a perfect continuum (33) that extends from a theoretical zero to a maximum that corresponds to the stuporous emotional state (34) with the possibility of reaching the degree of "suspended animation."

Considering schematically the general manner of behavior of the subject, it is possible to describe three phases of intensity of the hypnotic emotional state (21).

The first phase of intensity, which interests us here very specially, corresponds to an emotional intensity that does not exceed the boundaries of the current emotions that form an integral part of everyday living. It may come about in any relationship that provides either an understanding, reassuring, tranquilizing attitude to an individual who needs it and is willing to accept it from that particular person (thus bringing about a positive hypnotic emotional state), or an authoritarian attitude (causing a negative hypnotic emotional state). It makes no difference whether the relationship is between a physician and a patient, a



priest and a parishioner, parents and children, friends, or spouses (38, 39).

All the basic attributes of the positive hypnotic emotional state of fundamental importance in psychotherapy, may be found in this first phase of its intensity (35). These attributes are: emotional stabilization, receptivity of emotional nuances, motivation to accept the propositions and fulfill the requests of the person with whom one is in a hypnotic relationship (37), transmissibility of the hypnotic relationship, and certain psychophysiological phenomena that constitute a part of the positive hypnotic emotional state, such as a "trophotropic" effect on visceral functioning, decrease in capillary hemorrhage, diminished sensitivity to pain, regulation of uterine contractions during labor, etc.

The joint action of two fundamental attributes of the hypnotic emotional state, emotional stabilization and suggestibility<sup>8</sup> in this first phase of intensity, constitute a common factor that is responsible for the success of the interpersonal psychotherapeutic relationship (40), by favoring the free action of the patient's own biological powers of recovery, adaptation and development.

As the intensity of the hypnotic emotional state increases, the suggestibility of the person does not remain unchanged, but varies qualitatively.

In addition to previous understandings, various investigators have demonstrated that effective suggestions can be those which are given in the so-called "waking hypnosis," which we refer to the first phase of intensity of the hypnotic emotional state. When the third phase of intensity of this state is

reached, the person has a considerably diminished or even abolished contact with the external world, and his suggestibility becomes null.

It must be made clear that we understand by "effectiveness" of suggestions the disposition of the person to incorporate propositions that agree with his emotional condition and have often been duly rationalized, as well as his motivation to behave according to these propositions. In all circumstances, the reaction to suggestions does nothing more than reveal the psychophysiological possibilities of the person at that moment (36, 37).

The performance of more or less bizarre actions in the second phase of intensity of the hypnotic emotional state, such as those that result from various hallucinations, from the increased influence of the mind over the body, etc., does not signify a greater "effectiveness" of suggestion. Here, the accepted suggestion merely reveals the momentary psychophysiological changes that invariably take place in the emotional state of considerable intensity and persist only while a sufficient emotional intensity is maintained, with the sole exception of certain psychopathological cases.

\* \* \*

Emotional disturbances are revealed clinically by a great variety of functional somatic symptoms or behavior problems belonging to the so-called "minor psychiatry." Since there is no clear nomenclature or classification of these disorders, they are generally catalogued as "neuroses," with denominations that differ according to the doctrines of different contemporary psychotherapeutic schools and orientations.

Doubtless these disorders are caused by multiple factors, both constitutional and experiential, which interpenetrate and influence one another. The different causal factors, either constitutional or experiential, may unchain the same

<sup>8</sup> One of the basic forms of suggestibility has been defined (37) as "the motivation of a child to accept the verbal and extraverbal propositions and comply with the desires of its parents when these provide caresses at the moment when the child needs them or assume an opportune authoritarian attitude."

pathogenic mechanisms and give rise to clinical syndromes that have very much in common.

But in spite of this considerable heterogeneity in their etiology and clinical manifestations, the great majority of syndromes of emotional disturbance derive from a constant disorder: *an alteration of the capacity of the person to restore his emotional balance* (either by his own means or resorting to the help of other people within his usual environment) *in the face of situations that cause him to experience disturbing emotions* (18, 40).

It is a requisite for normal psychological functioning that a dynamic equilibrium be maintained. This is both a qualitative and a quantitative equilibrium. Its qualitative aspect refers to the compensation of different nuances of emotion of the disturbing type (mediated predominantly by the sympathetic system) by nuances of emotion of the stabilizing type (mediated predominantly by the parasympathetic system). In the quantitative sense, it concerns the variation in intensity of the emotional conditions (22, 41).

Emotions of a certain intensity that persist during a sufficiently long period of time bring about certain psychophysiological changes or phenomena that affect the person's health. These varied phenomena (identical to those obtained in the psychological laboratory by creating different emotional situations) constitute precisely the psychological or somatic symptomatology of the patients with emotional disturbances.

M. Petrova (42) obtained in dogs a series of models of the human emotionogenic changes by causing serious nervous trauma to these animals during a long time, even for years. She deliberately and systematically provoked disturbing emotions, such as fear, rage, etc., without giving the dogs the chance to compensate them with

stabilizing emotions. As a result, there appeared various pathological conditions of the nervous system, as well as diseases of the kidneys, liver, joints, middle ear, peristaltic disorders of the bowels, specific lesions of the skin and internal organs, etc. According to Petrova, these psychological traumas "evidently have a fundamental significance in predisposing the body towards all sorts of illnesses, including cancer and premature aging. It is therefore necessary to pay the utmost attention to the relationship between the psychological and the somatic spheres."

The relative incapacity of a person to reestablish his emotional balance after a disturbing stimulation of a certain intensity may be due to very varied causes. Leaving aside the organic diseases of the brain, it is possible to mention, among other functional causes, certain constitutional predisposing peculiarities and the external influences that reveal them, such as physical exhaustion, diseases, inanition, etc. Another very important factor is emotional immaturity, resulting from an inadequate proportion of stimuli of disturbing and stabilizing emotions in the period of psychophysiological development of the person and the non-compensation of this deficiency till the moment (18).

Psychopathological syndromes, with somatic manifestations or behavior problems, may be due, in the first place, to the permanent pathogenic action of an environment that makes the person experience an excess of disturbing emotions, with nuances of dissatisfaction, irritation, displeasure, oppression, etc., and at the same time restricts his opportunities for finding satisfying stimuli.

In other cases the disorder is caused by a stimulus-situation that determines a disturbing emotion of an intensity that surpasses the individual's threshold of tolerance. When the person can neither regulate this emotion

nor find in due time a helpful interpersonal relationship, such an experience comes to act as a "trauma" or "frustration," or "conflict," or "war neurosis," etc.

These psychopathologic syndromes will doubtless have different aspects according to the constitutional tendencies of the person, particularly in cases of schizoid, hysteroid, and other types of personality (43, 44). Even in these cases, heredity plays a role in determining the appearance of one or another symptom under pathogenic circumstances.

The pathological alterations of the process of emotional reaction may concern the persistence of increased emotional intensity, the qualitative balance between disturbing and stabilizing emotions, certain peculiarities in the cortical and subcortical participation, the associations attached to certain stimuli, etc.

Although emotional imbalances are extremely frequent, to the extent of being a practically normal component of affective life, it is relatively rare that they should lead to psychopathological conditions that require the aid of a professional psychotherapist. This is due to the fact that those emotional reactions which might have become the cause of severe emotional reactions are generally normalized with the aid of the person's everyday-life interpersonal relationships with his parents, friends, teachers, priests, physicians, and others. Such people provide in varied ways constructive interpersonal relationships in their respective environments.

With reference to these interpersonal relationships that exert psychoprophylactic and psychotherapeutic effects, some words of Khoroshko (45) may be quoted: "A cordial, courteous, affectionate, and understanding attitude towards the patient is of utmost

importance. The physician who reassures his patient and helps him to solve his conflicts is performing psychotherapy. This kind of therapy may be called natural, companionable, friendly, human, and humanitarian."

The most simple hypnotic state of the positive type has been described as the emotional condition a child experiences on receiving caresses when it needs them (39, 47). The expression of a loving attitude towards a child who needs it at that moment is nothing else but a direct or natural hypnotic induction (16). There is a perfect continuity from the light hypnotic state to the deepest (stuporous) one that may be obtained in a laboratory, or under very special circumstances in everyday life (22) by means of the same direct or natural procedure.

Such an appropriate attitude helps the person to balance and stabilize his emotional condition, making it possible for him to decrease his emotional intensity and change the negative nuance of emotion.

The emotional stabilization, which constitutes one of the basic attributes of the positive hypnotic emotional state, creates conditions that promote the free mobilization of the *natural recuperative forces of the person* which, in their widest sense, bring about adaptation, compensatory hypertrophy or hyperfunctioning, increase in anabolism, healing of lesions (49), etc. Their action causes the disappearance of the physical and psychological manifestations (symptoms) of emotional disturbance, and permits the person to take a healthier and more rational view of the situations in which he finds himself.

Thus, in a considerable proportion of cases of emotional disturbance it is sufficient to provide an adequate attitude in order to obtain a psychoprophylactic or psychotherapeutic effect, without

any need of giving the person special rationalizations.

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The process of emotional reactions in general results from a complex interaction between subcortical centers and the cerebral cortex, brought about by the joint and interdependent action of afferent sensory stimuli and mental activity, with precedence of one or the other.

The relative degree of participation of the cortex and the subcortical centers in the process of emotional reactions varies with the psychophysiological development of the person. These variations are particularly notable in the first years of life.

The newborn, whose cortical functioning is as yet very insufficiently developed, has only innate subcortical emotional reactions in the face of sensory stimulation. Some stimuli, such as sharp noises, hunger, cold, etc., cause him to experience innate emotional reactions mediated predominantly by the sympathetic system, whereas other stimuli, such as opportune maternal caresses, a warm environment, and so forth, determine emotional reactions mediated predominantly by the parasympathetic.

During an early period of life, while the child is still a being of subcortical emotional reactions, there is a complete dependency on the sensory stimulation provided by the infant's environment. If the continued action of stimuli that exert a disturbing psychophysiological effect is not sufficiently compensated by environmental stimuli which cause emotional stabilization, the child is likely to suffer organic disorders. This agrees with the high morbidity and mortality Spitz (49) observed in babies of institutions and hospitals who do not receive sufficient caresses, and illustrates the intimate relationship between mind and body, which is particularly evident in children.

As the anatomical and functional development of the brain progresses, and experience is accumulated, the emotional reactions of the disturbing type come to be no longer simple subcortical reactions to external sensory stimuli, but enter into an increasing relationship with the cortical functions, which participate both in the stimulation of these reactions through the subcortical system, and the regulation of emotional reactions of subcortical origin.

Childhood is full of new experiences that determine the most varied emotional reactions. Thus the loss of a toy, a deserved or undeserved punishment, the unfulfillment of a desire, or a disappointment in a friend, may have an emotional significance equivalent in all its aspects to the severe frustrations, traumas, or conflicts of an adult, with all the corresponding pathogenic consequences.

When the understanding of the spoken word is attained, the child begins to incorporate a considerable diversity of verbalized rationalizations to its emotional reactions. Such rationalizations, transmitted by way of little stories, explanations, examples, etc., participate in the construction of a rational system.

As the capacity to reason develops, the individual makes use of his experience and education to elaborate some philosophical system, convictions, value concepts, more or less complex habits, etc. All this builds up progressively his personality, which will not remain unchangeable but be subjected to constant reconstruction.

The emotional reactions become surrounded by more and more complex associations and conditionings. The conditioned or associated may give rise to emotional reactions of a certain kind and of varied degrees of intensity, in different circumstances in everyday life.

Thus the sensory stimuli that ascend through the subcortical structures in-

teract with the cerebral cortex, which confers nuances, increase or decrease of intensity, etc., to the corresponding emotional reactions. At the same time cortical functioning may act on the subcortical structures as a direct source of stimulation of emotional reactions.

There is, furthermore, an incorporation of habits. Of particular interest is the fact that some psychosomatic symptoms, behavior problems, etc., that result from pathogenic emotional reactions maintained for a certain length of time by persistent stimulation, may turn into undesirable habits, thereby outlasting the stimulating situation and the emotional disturbance that caused them (46, 50).

\* \* \*

The exposure of the growing individual to a sufficient variety of stimulating situations, which cause emotional reactions of diverse nuances, degrees of intensity, etc., plays an important role in the process of his emotional maturation. All other conditions being equal, such experiences enable him to defend himself better when faced with the frustrations, conflicts, and traumas that he is bound to have in his life. Thus psychopathological conditions are prevented.

On innumerable occasions, in a disturbing situation a mature person is able to achieve emotional regulation by his own means, resorting to varied rationalizations related to his convictions, his criteria, and the value concepts he has acquired in the course of his educational process.<sup>9</sup>

There may be, however, emotional experiences of a certain intensity which are provoked by a stimulating

situation that affects the deeper convictions, the value systems, etc., of the person in such a manner that he cannot find the rationalizations he needs for attaining emotional regulation through his cortical system.

Sometimes in such a situation the mobilization of the person's own cortical resources may be considerably improved if he receives more or less elementary sensory stimuli revealing an adequate interpersonal attitude towards him, usually of the understanding, accepting, reassuring kind. The person comes to find the desirable rationalizations and to reconstruct, if necessary, his convictions and value concepts.

In other cases it is not enough to establish a constructive interpersonal relationship, that is, an everyday-life hypnotic relationship of adequate type and intensity. The individual also needs to be given an orientation for the rationalizations he will work out.

The therapeutic efficacy of the rationalizations given to an emotionally disturbed person does not depend on the exactitude of their contents. The requisite is that these rationalizations be emotionally acceptable and helpful for the restoration of the person's emotional balance.

In his book on hypnotherapy Dr. Rafael Rodríguez (51) says: "I never neglected resorting to religious aid for my patients, on the contrary, I propitiate it." He makes special mention of the valuable cooperation he received in his psychotherapeutic work from Monsignor Barbieri, later Papal Nuncio in Uruguay.

In these different manners, one or another predominating according to the needs of the case, it becomes possible to achieve an emotional regulation that prevents intense emotional experiences from becoming pathogenic. This emotional regulation may take place rapidly or may require a longer or shorter period of time, as the patient

<sup>9</sup> To achieve this normal capacity of emotional regulation, the person must have had a normal balance between stabilizing and disturbing emotions in the period of his psychophysiological development, or have compensated the deficiencies of this balance later in life (18, 22).



may have to reorganize his rationalizations into a new consistent system, which will serve not only for the solution of the actual situation but will also, very possibly, help him to regulate his emotions more efficiently in the future.

Synthesizing, psychotherapy and psychoprophylaxis in general have the purpose of favoring the individual's own biological recuperative and adaptive forces, either by providing sensory stimuli for an adequate emotional state (as a rule, a stabilizing one), or by giving helpful rationalizations. Both ways are usually combined, since, when a constructive interpersonal relationship exists, the acceptance of rationalizations is considerably facilitated.

The relative importance of both manners of psychotherapy varies with the patient's level of age and psychophysiological development, with the factors that caused the emotional disturbance, etc.

The conflicts, frustrations and trauma which abound in everyday life cause a person to reconstruct continuously his beliefs and value concepts, either by himself or with the help of others. As a rule, this reconstruction is carried out slowly, almost imperceptibly, but under special circumstances, a critical emotional experience may require it to be ample and rapid.

It is worth insisting on the fact that only in exceptional cases, particularly of people who have constitutional psychological deficiencies or who did not have a normal emotional balance in the period of their psychophysiological formation, and who, furthermore, cannot find in their environment the help they need, emotional regulation cannot be achieved in everyday living conditions, with consequent psychopathological disorders and the need to be assisted by a physician or specialized psychotherapist.

Even in such cases, it must always be kept in mind that the relationship of the patient with the physician or psychotherapist can only be a secondary hypnotic relationship, whereas the principal hypnotic relationships, which possibly constitute the cause of the disorder, are found in the patient's usual environment (28). The continued influence of such harmful principal relationships may nullify the professional psychotherapeutic work.

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There is at present a large number of psychotherapeutic schools and orientations, based on different and often contradictory theories. McCary and Sheer (52) mention 56 of them, without pretending to have included them all.

For example, one orientation postulates that the patient will recover when he has been helped to discover within his own Unconscious some painful experiences from his childhood, related mainly to the impossibility of satisfying his sexual needs and incestuous desires.

Another orientation declares that therapy consists in giving the patient insight into the origin of his disease in an inferiority complex. This is done by discussing with him his individual style of living.

A third one asserts that the treatment of a person with psychological disorders consists in getting him to understand how his disease reproduces the myths, the archaic cosmogonies and the primitive thoughts of the collective Unconscious.

A fourth orientation claims that the recovery of a patient is obtained by teaching him to exert an intellectual control over the affective-impulsive aspects of his personality. Thus the therapist must assume an active role, continuing according to his own criterion the "education for living" of the patient.

A fifth example refers to a school that affirms that the essential factor for recovery in psychopathological cases is the interpersonal relationship between the therapist and the patient, which brings about in the latter a state of security, allowing him to solve his own problems, or "redefine his personality" as he finds it best, with no interference from the therapist, who must only provide this relationship without attempting any directive work.

This list could be made very long before exhausting all the forms of psychotherapy that are applied in practice.

The important fact is that, in spite of their heterogeneity and contradictions, all the schools and orientations achieve the recovery of the patients. What is more, the percentage of improvement obtained by the therapists of the most dissimilar and often irreconcilable orientations varies within very narrow limits.

The statistical material of 11 important psychotherapeutic centers in the United States and Europe, compiled by Appel, Lhamon, Martin Myers and Harvey (53) has made possible a comparison of the results obtained by the use of different procedures, hypnosis included, showing that the percentage of recoveries and improvements of divergent therapeutic schools varied from a minimum of 55% to a maximum of 76%, approaching in the vast majority of cases the average figure of 67%.

Rosenzweig (50) describes the situation very clearly by saying that all forms of psychotherapy, even including Christian Science, have cures to their credit, and that the cures obtained by following a certain ideology do not necessarily demonstrate that this ideology is true and all the others false. According to his words: "... it requires but little reflection to realize that the effective factors in any form

of psychotherapy are not necessarily those upon which its proponents insist. Unrecognized factors play a role, and among these there may be more that is common than is different."

The American Journal of Psychiatry has been publishing a growing number of articles which state the absolute indifference of the fact that one or another school is followed, or one or another explanation is given to the patient, as long as the latter is provided with an adequate interpersonal relationship.

Coleman (54), among others, declares that the relationship between doctor and patient should not be seen as a tool or instrument of psychotherapy, but as the primary process in itself, and regrets that "the psychiatrist in training too often conceives psychotherapy exclusively as a specific technique or group of techniques, rather than, in its most fundamental aspect, as an experience in human relationship and understanding."

Similarly Leo Kanner (55) says that the main factor in psychotherapy is not the right choice of a certain method or school, but the therapist himself, who has the key of the psychotherapeutic process.

To confirm all these facts Fiedler (56) invited a committee of expert psychiatrists to act as judges in an experiment that consisted in recording the psychotherapeutic interviews of a number of therapists of different and mutually inconsistent schools and orientations. The judges compared the records and found that the performances of expert therapists of different schools were more similar than the performances of experts and novices of the same school.

This shows that in practice expert therapists work very much the same way, independently of the theory they believe in. Fiedler concludes that "the goodness of therapy is a function

of the goodness of the therapeutic relationship."

In a Presidential Address to the American Academy of Psychiatry, "The Present Challenge of Psychiatry," Appel (57) declared that the cures obtained by the psychotherapist are comparable to the benefits that result from constructive interpersonal relationships in everyday life. These benefits do not result primarily and basically from intellectual reasoning and logical discussion, but require an influence over the emotional forces that paralyze reason. He says: "The therapist, with his attention, attitudes and words attempts to repeat the condition of normal wholesome development of the infant or child. It is not explanation, reasoning, advice, or direct verbal manipulation that affords the opportunity of growth. The attitudes that mature parents exhibit toward infants and children allow growth impulses to develop, and fear and anger to assume gradually their proper proportion for survival . . . It is the attitudes that help healing."

In another study Fiedler (58) investigated how people of different psychotherapeutic orientations would define the ideal therapeutic relationship. Ten people (three analytically-oriented therapists, one Adlerian, three of the non-directive school, and three laymen) were asked to select from a long list of statements the ones that would describe what they thought to be the ideal psychotherapeutic relationship, and to rate the value of these statements on a seven-point scale. Positive and surprisingly high correlations were found in their opinions. They all included among the most desirable characteristics the following: empathy, comprehension of the patient's line of thought, expression of understanding by means of gestures and tone of voice, confidence, acceptance of all that is

said and done by the patient as something normal and understandable, etc.

\* \* \*

From here on, we will call "hypnotherapy" the kind of psychotherapy in which *there is a deliberate intensification of the emotional state of the patient, generally of the positive-stabilizing type*. Better still, the patient is helped to achieve the intensification of the same emotional condition that is experienced in an ideal therapeutic interpersonal relationship, this being precisely a direct procedure of hypnotic induction.

As the intensification of the emotional state progresses, certain changes come about in the psychophysiological state of the person. These changes may either increase, as in the case of emotional stabilization, or decrease, as in the case of suggestibility, while the intensification (or deepening) of the hypnotic emotional state advances.<sup>10</sup>

The attribute of *emotional stabilization* which characterizes the positive hypnotic emotional state and is revealed by a trophotropic effect that

<sup>10</sup> We distinguish three phases of depth of the hypnotic state on the basis of the external aspect of the person's behavior. In the first phase, the person acts, talks, etc. in a way that does not differ from his habitual behavior in daily life, though he may be able to present some hypnotic phenomena, such as partial analgesia, a certain degree of catalepsy, etc. In the second phase, the external aspect of behavior is altered either in the manner of intense excitation or of uncommon slowness of movements and reactions. In both cases there is likely to be a decrease in the critical functions, a tendency to confuse the person's own thought processes with external reality, an increased influence of the psyche over the soma, etc. For these reasons, this phase is the most adequate for achieving some bizarre behavior phenomena. The third phase is characterized by extreme changes in the physical aspect of the person, consisting in a stuporous condition with spontaneous anesthesia, catalepsy, etc., or even an extreme condition of "suspended animation." In this phase, no action can be carried out by the person (21).



promotes the biological recuperative powers becomes more and more evident with the deepening of the hypnotic emotional state. In the third phase of hypnotic depth, the emotional stabilization may reach the degree of "suspended animation."

An opposite change is found in the attribute suggestibility, which has its maximum of efficacy in the first phase of intensity of the hypnotic emotional state and decreases with the intensification of this state, till it disappears in the stuporous condition (21).

These two fundamental hypnotic attributes, emotional stabilization and suggestibility, combined in varying proportion according to the depth of the hypnotic state, constitute the essential factors for the psychotherapeutic effects that may be attained in this state.

Suggestion does not act directly in psychotherapy as a sort of "force" that cures or eliminates symptoms. Instead, when adequately oriented in the manner of advice, persuasion, explanations, interpretations, or even, in some cases, authoritarian commands, it constitutes a way towards emotional stabilization.

The lack of parallelism between hypnotic depth and suggestibility was already mentioned by Bernheim (59) who said: "Observation of facts and meditation have led me to change my understanding, which had been Liébeault's. The suggestibility created in induced sleep is not proportional to the depth of this state: it is rather the contrary that seems to be true."

\* \* \*

At present only laymen may think that hypnotherapy is synonymous with treatment by direct suggestion. As McCord (60) says: "It is regrettable that symptom-eliminating suggestions still constitute the only hypnotic 'technique' that is considered by people uninformed about the modern publications regarding hypnosis."

Such a belief in the almost supernatural power of suggestion takes root from certain theories that defined hypnotism as "a state of increased suggestibility" and asserted, like Pavlov (23), that "suggestibility is irresistible" in the hypnotic state.

But experience reveals that this is not so. In the practice of hypnosis it is clearly seen that such an "irresistible" direct suggestibility does not constitute a characteristic trait of the hypnotic emotional state, since very commonly the subject under hypnosis either disregards the suggestions he receives, alters them as he thinks best, or does exactly the opposite to what has been suggested (61).

There is no doubt that certain subjects with extreme biotypes or with pathological peculiarities, who often have been previously trained, may have a very special facility for responding to certain suggestions regarding some types of hypnotic phenomena. But these special individuals cannot be taken as typical representatives of all mankind for the understanding of both hypnotism and suggestibility. The reactions of such people demonstrate the possibilities within the totality of psychophysiological reactions that may be found in the hypnotic state in different types of subjects.

The hypnotic emotional state in itself, through its attribute of emotional stabilization, with no suggestions whatsoever, is often sufficient for obtaining a therapeutic effect not only in psychosomatic but even in organic diseases. This quality of the hypnotic emotional state was already noticed by classical authors like Binet and Féré, Wetterstrand, and others (62), though they did not stress this point.

In the so-called Temples of Sleep in Ancient Greece, the therapeutic factor may be assumed to have been a prolonged hypnotic sleep, which the patient either entered spontaneously (autohypnosis) or by a procedure of

induction that was a mere description of the greatness of Aesculapius.

The contemporary therapeutic procedure of prolonged sleep also makes use of emotional stabilization, and some authors stress the advantages of hypnotic sleep over sleep induced by drugs (8, 22).

Among other authors Platonov (8) recognizes that "the mere fact that the patient remains in a condition of suggested sleep is often sufficient for influencing positively the nervous system" and that "in many cases the state of light suggested sleep without special suggestions is even capable of producing a positive therapeutic effect."<sup>11</sup>

Sherbak and Maizet (63) report a rapid and amazing recovery of a case of extremely severe humid eczema obtained by a psychotherapy that consisted in leading the patient into a "light suggested sleep" and giving her only suggestions of "general well-being," with no mention of her eczema.

Conn (64) applies extensively a procedure which he calls "hypnosynthesis," which consists precisely in making use of the hypnotic state itself for therapeutic purposes. This state is induced, and the patient is permitted to enjoy it as he pleases, without being given any symptom-eliminating suggestions, or being forced to remember unpleasant events, or being given preconceived interpretations or directions. With this method, in which no importance is attached to the depth of the hypnotic state attained, Conn has obtained very satisfactory results in various kinds of patients, even achieving, after a variable number of sessions, the correction of some sex offenders remitted for treatment by the court (65).

<sup>11</sup> This statement is particularly remarkable because of the fact that Professor K. I. Platonov, a student and collaborator of Pavlov, is an orthodox representative of the Pavlovian doctrine and sees direct symptom-eliminating suggestion under deep hypnosis as the most efficacious element in hypnotherapy.

The authors do hypnotherapy according to a similar principle. As a general rule, they do not give suggestions, apart from those indirect ones that are intended to increase the self-esteem and well-being of the patient. At the same time, they pay considerable attention to the principal hypnotic relationships of the patient in his everyday-life environment (18, 66, 67, 68).

We consider that the most desirable depth of the hypnotic emotional state for therapeutic purposes differs for various kinds of patients, according to the kind and severity of their disturbances, their degree of exhaustion, their age and constitutional type, etc.

Many patients with psychogenic or even organic disorders may be treated successfully in the hypnotic state of the first degree of intensity, or "light" hypnotic state or "waking hypnosis." This is precisely the condition in which placebos may have curative effects and active drugs may have no effect whatsoever (69, 70).

The light hypnotic state is most adequate for giving rationalizations that may act as stimuli for emotional stabilization. Only in this light state can the patient accept the rationalizations that the therapist gives him in very different ways, making use, for example of drugs, placebos, hygienic measures, rituals, etc. (71).

Levina and Terletzkaya (72) consider the suggestive action they apply in a "waking" state to be "the most valuable and effective resource for the success of therapy." Many other authors have made mention of the important psychotherapeutic possibilities in the "light hypnotic state." Ambrose (73) declares that in hypnotherapy with children the results of treatment were "not proportional to the depth of the hypnotic state attained." Conn (64) in the aforementioned procedure of "hypnosynthesis" never strives to obtain the so-called "deep trances" but

makes use of what he calls "an effective interpersonal relationship with his patient." Giljarovski (74) assures that "It is a considerable error to pay attention to the suggestive medicinal effects only in the course of a deepened hypnotic state." Völgyesi (75) writes of his extensive experience with hypnotherapy, carried out successfully in the great majority of cases under a light hypnotic state.

The deep hypnotic emotional state may be used very satisfactorily in patients with considerable emotional exhaustion, general fatigue, psychosomatic troubles that cause much discomfort, severe behavior problems, as well as a means of obtaining analgesia for surgical operations, childbirth, etc. The deeper the hypnotic state, the more effective is its attribute of emotional stabilization, with its resultant acceleration of anabolic processes, regularization of visceral functions, and mobilization of recuperative powers. All this considerably shortens the time required for recovery.

We have already insisted on the fact that the acceptance and efficacy of suggestions decreases with the deepening of the hypnotic state, till it disappears in the stuporous state. Naturally, the therapeutic efficacy of suggestion must not be confused with the possibility of obtaining bizarre forms of behavior in a deep hypnotic state.

It is completely inadequate to employ any form of therapeutic suggestion of a direct or indirect type in the deep hypnotic state. Even when suggestions, in one form or another can be accepted in a hypnotic state of a certain depth, they cannot have durable effects or, in Giljarovski's (74) words: "... do not possess the desired stability and constancy."

If the suggestion is to have a lasting effect, it is necessary that it be incorporated into the person's rational system. This incorporation can only take place if an emotionally acceptable sug-

gestion is given in the first phase of hypnotic depth, or light hypnotic state, while there is still no alteration in the sensory functions or in the functions which, as King (76) says, "organize and censure thought."

King (76) finds that there are many characteristics of mental functioning which are common to the hypnotic state of a certain depth and to schizophrenic cases. Both may have, for example, disorders in sensation and perception, loss of orientation, amnesias, hallucinations, blocking of thought, etc. There even appears to be a parallelism between the severity of the schizophrenic reaction and the depth of the hypnotic state. In a test of proverb-interpretation the subjects in a hypnotic state of certain depth gave exactly the same kind of bizarre and concrete answers that are often given by schizophrenics.

Even the mechanism of speech is altered in a deepening hypnotic state. The subject tends to speak slowly and with difficulty, till he loses both the desire and the possibility of speaking, when the stuporous condition is reached.

Because of all these alterations in the sensory functions, the functions of thought organization, speech, etc., which take place at a certain level of intensity of the hypnotic emotional state, the so-called procedure of "hypnoanalysis" (defined as a psychoanalysis under the hypnotic state) can, in the opinion of the authors, be carried out only in a light hypnotic state, that is, in the state in which the patient can talk freely, coordinate his thoughts, and so forth. In other words, it is carried out in the same condition in which ordinary psychoanalysis is performed (without being qualified "hypnoanalysis") for, as Watkins (29), among other authors, says, the hypnotic concept of "trance" and the psychoanalytic concept of "transference" are essentially identical.

Much has been said about the methodology of hypnoanalysis with the use of tests, automatic writing, projective techniques, crystal-gazing, etc. There are protocols of hundreds of pages of psychoanalytic interviews supposed to have been carried out under a deep hypnotic state. But this supposition is unwarranted in the opinion of the authors. There is no doubt that the operators who strove to perform such "hypnoanalysis" with all their varied techniques initially led their subjects into a deep hypnotic state. But, when they required the subjects to talk and answer questions, it may have been that these subjects passed from the deep hypnotic condition to a light one.

The authors have performed a simple experiment. Eighteen subjects under psychotherapeutic assistance were led into a hypnotic state of a certain depth, in which it was proved that they had spontaneous analgesia to a strong compression of a finger. Such an analgesia, which comes about without any suggestion, constitutes one of the characteristic traits of the hypnotic emotional state in the second phase of intensity, or somnambulistic state (21, 77). We then asked them questions such as: "How are you feeling?", "Do you find any difference between your present experience of a trance and the last one?", "Do you remember something special about the last trance?" We insisted that they should give as many details as possible, stressing at the same time that they were not to come out of the deep state they were in. The patients began to answer with considerable difficulty, pronouncing each word slowly and with effort till, after our insistence on detailed answers, their way of speaking came closer and closer to normal. When the patients were speaking almost normally, we suddenly pressed hard one of their fingers. All the 18 subjects announced that it hurt. We apologized,

saying that it had been a test to determine the depth of their relaxation.

There was obviously a qualitative difference between the condition in which the subject was unable to talk and the one in which he could do so. We understand this difference to consist in a passage from a deeper hypnotic state with spontaneous analgesia to a lighter state where there is no such analgesia, that is, the same "transference" in which ordinary psychoanalysis is conducted.

Later, while we were still talking with the subjects, we gave them the explicit suggestion that they would feel no pain if we pressed their finger. After this suggestion, only one of the subjects could tolerate well this compression, contrary to what happened in the first part of the experiment, when all the 18 subjects had analgesia without receiving any suggestion in that respect.

\* \* \*

In the course of history hypnotherapy has been repeatedly identified with direct suggestion. The failures that resulted from such an identification made hypnosis lose prestige as a therapeutic resource (78, 79).

Already in 1901 Pitres (80) described how the Nancy School was firmly convinced that all diseases contained functional elements which could be improved by direct suggestion, adding that: "On the basis of these principles Liébeault and Bernheim in Nancy, Berillon and Luys in Paris, Lloyd Tuckey in England, Moll in Berlin, Van Renterghem and van Eeden in Amsterdam, Wetterstrand in Stockholm, and others insisted in hypnotizing all the patients that agreed to be under their care: ataxic, tuberculous, cancerous, coxalgic, dysenteric, etc., prohibiting some to suffer pain, ordering others to have appetite, telling a third one not to have more than three bowel movements a day, etc. They declare having obtained re-

markable successes and publish very beautiful statistics." Ingenieros (62) comments that some followers of this school came to proclaim suggestion as the panacea of panaceas.

In a recent book on contemporary hypnotism by Platonov (8) there is a continued insistence on the value of direct suggestion under a deep hypnotic state as a healing resource for an immense variety of diseases, many of them of an organic nature. It is even said that direct suggestion can alter organic functioning. The following are examples of suggestions which he gives in an authoritarian manner to different types of patients: "What you have suffered belongs already to the past, and does not trouble you any more." "You have forgotten all your suffering, and when you remember it, it does not distress you." In treating an alcoholic: "You feel no attraction toward alcoholic drinks; on the contrary, you feel an invincible disgust towards them."

The action or efficacy of these suggestions is given the following foundation by Platonov according to the Pavlovian theory: When the suggestion "Your suffering belongs to the past and does not trouble you any more" is repeated several times, an "inhibition of the point of concentrated excitation" is brought about. This, in its turn, "determines a weakening of the concentric zone of negative induction eliminating the pathological point itself." The words "what you have suffered belongs to the past" represent an inhibitory conditioned reflex directed precisely towards the suppression of the morbid condition determined by the "pathological point." (8).

This same book indicates, always on the basis of Pavlov's theory, that it is

necessary for the hypnotic state to be sufficiently deep in order that suggestions may be effective, for "the fundamental mechanism of suggestibility consists in a dissociation of the more or less unified normal activity of the cerebral cortex . . . From here, it may be deduced that the depth of suggested sleep should be sufficient, so that there may be complete functional dissociation of the cerebral cortex into zones of sleep and wakefulness . . . According to Maiorov, the somnambulistic phase of suggested sleep is precisely the one that is defined by the maximum of capacity of the cerebral cortex of the hypnotized person to dissociate itself into zones of sleep and wakefulness."

It is an interesting fact that even in the Soviet Union there are investigators like Gurevich (81) who make it clear that the Pavlovian theory, even though it is of enormous importance for physiology, is not sufficient for explaining psychological events and that the mind has special qualities that cannot be explained by simple elements of nervous activity. Special theories are required for psychological functions.

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Lesse (82) declared in 1958 that in the Soviet Union hypnosis has lost its field of application, giving way to the use of prolonged sleep for 16 or 18 hours.

This decrease in the interest in hypnotism was bound to take place, since the treatment by means of direct suggestion under hypnosis could do no more than discredit hypnotism, as has happened repeatedly in history. Thus hypnotism has been repeatedly discarded as useless (79) and its study been delayed for another decade or so until the advent of a new wave of interest.



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## THE NECESSARY AND SUFFICIENT CONDITIONS FOR HYPNOTIC BEHAVIOR

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A theory of hypnosis stands or falls by its answer to one crucial question: Why do some subjects quickly and easily experience many of the phenomena of hypnosis while other subjects show very little if any hypnotic behavior after many attempts by numerous hypnotists? This paper presents suggestive evidence indicating where an answer to this question may be found.

### MOTIVES, EXPECTATIONS, AND ATTITUDES

Recent theories of hypnosis tend to view the "good" hypnotic subject as a person who (a) has favorable attitudes toward hypnosis, (b) is strongly motivated to be hypnotized, and (c) expects to be hypnotized. Although hypnotizable subjects often show these characteristics, this is by no means always the case. Some subjects quickly and easily show some, if not many, hypnotic behaviors — e.g., catalepsy, visual, auditory, and tactile hallucinations, age-regression — when they do not want to be hypnotized, when they are afraid of being hypnotized, and even when they do not know that they are being hypnotized. Erickson and Kubie (22) have demonstrated that it is unnecessary for a person to know that he is being hypnotized to behave in the hypnotic manner; by indirectly guiding an individual to become atten-

tive to the situation described by the hypnotist, they were able to induce her to show hypnotic phenomena — e.g., age-regression and amnesia — when she was under the impression that she was merely observing the hypnotizing of another person. Along similar lines, I found in a recent study (13) that 20 out of 70 "naive" subjects (i.e., subjects who had not participated in previous experiments) could be readily induced to show arm levitation, limb catalepsy, eye catalepsy, anesthesia, and sensory hallucinations when the situation was designed in such a way as to lead them to believe that they were being tested for "imaginative ability." (These subjects were instructed to *imagine* that an arm was rising, to *imagine* that a limb was heavy and immovable, etc.)

That hypnotic behavior can be induced in appropriately predisposed subjects contrary to their expectations has been demonstrated in a number of investigations; Wells (42) and the writer (13), for example, report that some subjects who do not expect to be hypnotized can be easily hypnotized, and that some subjects who are certain that they can be easily hypnotized cannot be induced to show any hypnotic behavior even after many trials with a number of hypnotists.

Although the prestige of the hypnotist and the nature of the relationship between subject and hypnotist often have a significant influence on the subject's behavior, these also are not always crucial factors. The present writer and other investigators who began working with hypnotic phenomena when still undergraduates found that they could easily hypnotize some subjects with whom they had no prestige whatsoever. Furthermore, Barry,

<sup>1</sup> Worcester Foundation for Experimental Biology and Medfield (Massachusetts) State Hospital. A condensed version of this paper, entitled "Experimental Evidence for a Theory of Hypnosis," was presented at the annual meeting of the American Psychological Association in the Symposium on "The Nature of Hypnosis," September 9, 1959. This investigation was supported by a research grant, MY3235, from the National Institute of Mental Health, Public Health Service, and by a research grant from the National Association for Mental Health.

MacKinnon, and Murray (15), Saltzman (38), Friedlander and Sarbin (27), and Eysenck (25) have experimentally demonstrated that most subjects behave in essentially the same way in different hypnotic sessions, when different induction procedures are used, and when different hypnotists participate. Finally, the phenomenon of autohypnosis indicates that *some* individuals are able to experience *some* hypnotic phenomena without having formed an interpersonal relationship with a hypnotist (24).

If favorable motivations and appropriate expectations and attitudes toward hypnosis are not essential factors for hypnotic behavior, what are the crucial factors? After a series of experiments Young (43) concluded that "the differences which appear in somnambulism are differences in . . . the persons involved, and would be better described, perhaps, merely as individual differences in normal persons, than as differences between the normal and hypnotic states as such." Along similar lines, Friedlander and Sarbin (27) note that "hypnotizability is not primarily a function of the particular hypnotist, but rather of the subject himself." After reviewing the effects of various types of hypnotic induction procedures, Sarbin (37) emphasized that "since the induction procedure *per se* cannot account for the differential responsiveness of subjects, this leaves the subject as a *person* as the more fruitful focus of study."

What are the significant characteristics of the "good" hypnotic subject? How does the "good" hypnotic subject differ as a person from the "poor" hypnotic subject? Before answering these questions it is necessary to specify exactly what the good subject does and what the poor subject fails to do during an hypnotic experiment.

#### THE UNIQUE FACTOR IN HYPNOTIC BEHAVIOR

Both the normal "waking" individual and the "hypnotized" subject attend to, think about, and respond to *selected* cues (or stimuli). The waking individual and the poor hypnotic subject attend to some cues and not to others, but these cues are derived from their own ongoing purposes and are continually varying; the good hypnotic subject, however, becomes and *remains* (during the experiment) selectively attentive, thinking about, and responsive to cues emanating from the hypnotist (and concomitantly becomes and *remains* selectively inattentive, not-thinking-about, and unresponsive to other potential stimuli.)<sup>2</sup> Although this appears to the present writer, to Leuba (32), and to others to be the unique factor in hypnotic behavior, evidence that this is actually what distinguishes the good subject during hypnosis is at present based on observation and on the subjects' verbal reports. For example:

(a) Many investigators have noted that the good hypnotic subject appears to be responsive only to those aspects of his self and surroundings to which the hypnotist specifically directs his attention (6). Christenson (18) emphasizes that "unless the agent calls them to attention, a number of environmental stimuli seem to be shut off, for example, noises in general, and awareness of or reaction to the presence of other persons not involved in the process." Arnold (1) observes that "in

<sup>2</sup> In addition to the above, the good hypnotic subject is generally *more* attentive and *more* responsive to his specific stimuli (viz., stimuli emanating from the hypnotist) than the "normal waking" individual. However, when a "waking" individual is wholeheartedly concentrating on a book or when he loses himself in a play or television show, he may be just as responsive to some stimuli and just as unresponsive to other stimuli as the good subject during the hypnotic experiment.

hypnosis (as in sleep) sensitivity to outside stimulation (apart from stimuli by the hypnotist) is decreased considerably." Along similar lines, Erickson has noted in a series of reports that his good hypnotic subjects show an apparent unawareness of auditory, visual, and tactile stimuli which do not belong to the hypnotic situation itself, as the subjects themselves define the situation.

(b) If the hypnotist pauses at various points in the induction procedure and asks the subject what he is thinking about, the poor subject almost always answers that he is thinking about something unrelated or something contrary to the immediate hypnotic situation; for example, he is thinking about the street noises, how uncomfortable it is sitting in the chair, how silly this all is, etc. In contrast to the above, the subject who will exhibit the classical hypnotic phenomena typically answers that he is not thinking of anything at all. If the good subject reports that he is thinking about something, it is related to the immediate hypnotic situation, e.g., "I'm thinking how peaceful everything is," "I'm thinking how heavy my arm felt when I tried to move it." (7).

(c) If subjects who have participated in numerous hypnotic experiments with a variety of hypnotists using various types of induction procedures are asked to state "as scientifically and objectively as possible what the difference is between the way you feel during hypnosis and when awake," they state directly or indirectly that during the hypnotic experiment they are less responsive to stimuli not emanating from the hypnotist. Typical answers are: "Things don't matter too much during hypnosis . . . less awareness of my physical self"; "When I'm awake I'm aware of more. I see more. In trance you see what you're directed to. You're not bothered by anything else"; "When I'm awake, I'm more

alert. I feel more like doing things. I don't much care about doing things during hypnosis. I don't pay attention to anything." (2).

The significance of the above factor has been noted by practically all investigators. However, since this factor includes two interrelated components—the subject (a) attends to and (b) thinks about the implications of the hypnotist's statements (and concomitantly (a) remains inattentive to other potential stimuli and (b) inhibits critical thoughts concerning the hypnotist's statements—it has received a variety of formulations which despite superficial disagreement actually have a common referent. Freud (26) emphasized the first component—attention to the words of the hypnotist—when he concluded that the hypnotic situation is one in which "the hypnotist has said to the subject: 'Now concern yourself exclusively with my person; the rest of the world is quite uninteresting' . . . The command to sleep . . . means nothing more or less than an order to withdraw all interest from the world and to concentrate it upon the person of the hypnotist. And it is so understood by the subject." (Although Freud speaks in terms of the subject attending to the *person* of the hypnotist, it is more appropriate to state that the subject attends to the *words* of the hypnotist or to the situation described by the hypnotist.) Leuba (31) also notes this component when he writes that the primary characteristic of hypnotic behavior is "the limitation of the spontaneous mental life of the subject and the consequent limitation of attention to the stimuli provided by the experimenter." Arnold (1) emphasizes the second component, viz., the subject limits his symbolic processes to the situation described by the hypnotist; she writes that the subject "must literally think as the operator wants him to think. In every instance in which the subject cannot be hypnotized, he re-

ports afterwards either that he could not concentrate on the experimenter's words, perhaps because he could not forget the absurdity of the situation, perhaps because he kept thinking about something else . . . or deliberately resisted." Hull (29) came to a similar conclusion: "The subject's own symbolic processes . . . remain passive so far as the particular act suggested is concerned . . . Apparently some individuals are unable to withdraw to an appreciable extent the influence of their own symbolic processes; these individuals would be classed as insusceptible to heterosuggestion." (Hull's formulation requires revision. It is not the withdrawal of symbolic activities *per se* which is the unique factor but the withdrawal, i.e., inhibition of, *critical* symbolic activities.) Weitzenhoffer (41) also notes this factor, e.g., "one must ask whether inhibition or abolition of the critical faculties may not be the main character and condition for suggestibility and hypnosis."

Although superficially dissimilar, the above statements are actually various ways of conceptualizing one essential factor: the good subject in a hypnotic experiment attends to and thinks about the situation described by the hypnotist and, concomitantly, *remains* relatively inattentive, not-thinking-about, and unresponsive to other symbolic or concrete stimuli. However, since the situation described by the hypnotist may vary from one that is extremely limited—"you are going sound asleep"—to one that includes all aspects of the normal stimulus surroundings—"behave as if you are awake when Dr. X enters the room"—the cues or stimuli to which the good hypnotic subject attends, thinks about, and responds may vary from those which are effective during sleep to those which are effective during normal waking behavior. If the "hypnotized" subject is given appropriate sleep-inducing instructions, he may en-

ter physiological sleep, i.e., the electroencephalogram may show "delta," "spindle," or "slow regular waves" (14, 40).<sup>3</sup> However, if the "hypnotized" subject is given suggestions to "behave as if he is awake," he may be indistinguishable from a normal waking individual; e.g., De Milechnin (20) writes: "There appears to be a remarkable similarity between the 'somnambulistic' hypnotic behavior and the ordinary waking behavior . . . Our best hypnotic subjects have appeared to be the least convincing ones to the colleagues who wanted to see hypnotic behavior." In fact, it can no longer be seriously disputed that all of the hypnotic phenomena can be elicited in appropriate subjects by a direct approach which does not induce relaxation, drowsiness, or lethargy, and that the numerous signs which were formerly considered to be characteristic of "hypnosis"—a certain type of breathing, lethargy or passivity, relaxation, a fixed stare, a fixed position of the eyeballs, etc.—are not necessary for hypnotic behavior (35, 8).

#### THE "HYPNOTIC APTITUDE"

The evidence available at present suggests that the specific behavior which characterizes the good subject during a hypnotic experiment is an integral part of his behavioral repertoire *before* he participates in such experiments. More explicitly, during the course of his normal "waking" life the somnambulistic hypnotic subject is predisposed to become and *remain* (for a relatively extended period of time) attentive, thinking about, and responsive to selected stimuli. Young (44) noted that his good hypnotic subjects

<sup>3</sup> However, when the electroencephalogram indicates that the "hypnotized" subject is asleep, the subject is *not* responsive to further suggestions. The moment the subject begins to respond to additional suggestions, the electroencephalogram shows patterns characteristic of "drowsiness" or "normal waking."

showed one or more of the following characteristics *before* they were formally hypnotized: "deep abstraction, reverie amounting almost to ecstasy, putting oneself to sleep at will, actually hypnotizing one's self." In an earlier study (6) I found similar characteristics among somnambulistic subjects, e.g., they were able to sleep at will and were able to concentrate on their work or studies by blocking out irrelevant stimuli. The results of a more recent study (13) also suggest a similar conclusion. At the present time we have studied the life-histories of 16 somnambulists and a matched control group of poor hypnotic subjects. Five of the 16 somnambulists stated, when asked to discuss their experience with pain, that they do not require a local anesthetic for dental work; prior to participating in hypnotic experiments, they had discovered that by thinking about something pleasant and inhibiting all thoughts concerning the dental situation, they could undergo various dental procedures—including extractions—without discomfort (3). Of the 16 poor hypnotic subjects, none stated that he could forego a local anesthetic for dental work.

Other workers, using a different terminology, also note that the somnambulistic hypnotic subjects possess a distinctive "ability" or "aptitude." Bernheim (16) emphasized that "the somnambulist often goes spontaneously into the somnambulistic condition of consciousness . . . they pass from one state of consciousness into the other very easily; I repeat the fact that they are somnambulists spontaneously without any art of preparation." Christenson (19) writes that "observation of excellent subjects has shown that they will develop brief trances on a spontaneous basis . . . Such transitory states when not perceived can distort data gained from 'waking' experiments with good subjects. These states are not usually noted by the subjects

themselves unless attention is called to them . . ." Other workers, e.g., Malmo, Boag, and Raginsky (33), also note that during normal life and during "waking" control experiments, good hypnotic subjects "tend to lapse into a mild hypnotic state." The present writer suggests that the above statements—viz., the good subject goes "spontaneously into the somnambulistic condition of consciousness," "develops brief trances on a spontaneous basis," and "lapses into a mild hypnotic state"—are different ways of saying that the good subject is predisposed to become and remain attentive, thinking about, and responsive to selected stimuli.

#### THE ATTITUDE OF "BASIC TRUST"<sup>4</sup>

The above ability or aptitude is probably both a *necessary* and *sufficient* condition for *autohypnotic* behavior. Furthermore, a recent series of investigations (13) indicate that this aptitude is probably both a *necessary* and *sufficient* condition for hypnotic behavior when the subject does not perceive the situation as involving hypnosis or does not perceive the situation as involving an intimate relationship with another person (a hypnotist). However, these recent studies (13) also indicate that individuals who possess the "hypnotic aptitude"—i.e., individuals who can quickly and easily become and remain attentive, thinking about, and responsive to selected stimuli—may *not* show *any* hypnotic behavior in a situation defined as involving "hypnosis" if they lack the attitude of "basic trust" toward oneself and others.<sup>5</sup> One of these studies (to

<sup>4</sup> This section, which reports the results of experiments carried out during the summer and fall of 1959, was not included in the paper presented before the meeting of American Psychological Association.

<sup>5</sup> The concept of "basic trust" is borrowed from Erik Erikson (23) who writes as follows: "For the first component of a heal-

[footnote continued on next page]



which I referred in an earlier section of this paper) can be briefly summarized as follows:

*Preliminary questionnaire.* Seventy subjects—20 male and 50 female attendants, nurses, and clerical workers at the Medfield State Hospital—were given the Guilford-Zimmerman Temperament Survey and an abbreviated version of the F (California Authoritarian) Scale.

*Experiment 1: "Imagination"*

*Procedure.* Each of the 70 subjects participated in an individual session, in which he was told that he was to be tested for "imaginative ability." (Hypnosis was not mentioned.) The subject was instructed to "imagine as vividly as possible" and to "concentrate on" the following:

(a) Imagine that your left hand is becoming very light like a feather. Imagine that it is a balloon and it is rising up and up. (Instructions to imagine the arm becoming lighter were continued for 30 seconds.)

(b) Imagine that your right arm is a solid steel bar. Imagine it is solid, hard, rigid, and immovable. (This and each of the following instructions were repeated for 30 seconds.)

(c) Imagine that your left leg is becoming dead, dull, numb, and insensitive. Imagine that it has fallen asleep and that it cannot feel anything at all.

thy personality I nominate a sense of basic trust, which I think is an attitude toward oneself and the world derived from the experiences of the first year of life. By 'trust' I mean what is commonly implied as far as others are concerned and a simple sense of trustworthiness as far as oneself is concerned. When I say 'basic', I mean that neither this component nor any of those that follow are, either in childhood or in adulthood, especially conscious." Whether the "attitude of basic trust" derives from the experiences of the first year of life or is a function of experiences extending over a much longer life period can be decided only by long-term genetic studies.

(d) Imagine a very heavy weight on your right leg. Imagine that the weight is so heavy that it is impossible to move the leg.

(e) Imagine that your eyelids are becoming very heavy, as if they are made of steel. Imagine that they are so heavy that you cannot keep them open.

(f) Imagine that I am turning the heat on in the room and that you can feel the hot air blowing toward you . . . Now imagine that I am turning the fan on and you can feel the cool air coming in your direction.

(g) Imagine that your lips are becoming very dry and you are becoming extremely thirsty. Imagine that you have not had a drink of water for many days . . . Now imagine that you are drinking a cool refreshing glass of water.

(h) Imagine that you are at home in bed, you are sleeping, and you are having a beautiful dream.

Immediately after completing the above, the subjects were asked to comment on their experiences during the experiment. After recording their verbal reports, they were asked if they "felt the experiment had something to do with hypnosis." Finally, they were told not to discuss the experiment with others.

*Results.* Twenty of the 70 subjects responded to the above tests as if they were "hypnotized"; they showed arm levitation, limb rigidity, anesthesia, eye catalepsy, hallucinations, and "hypnotic dreams," and their subsequent verbal reports were indistinguishable from those of "good" hypnotic subjects, e.g., "Are you sure you didn't turn on the heat and the fan? I was sure I felt them blowing against me," "I really thought I couldn't move my arm," "I felt like I was dying from thirst," "I was stunned when my left leg felt glued to the floor," "I felt like I could-



n't open my eyes," "I had a beautiful dream in which . . ." These 20 subjects were rated as possessing the "hypnotic aptitude" to a marked degree.<sup>6</sup>

When asked if they "felt that the experiment had something to do with hypnosis," 19 of the 20 subjects (who responded positively to all of the above tests) replied that they did not think the experiment was very much like hypnosis, and one subject stated that the experiment was probably similar to hypnosis.

#### *Experiment 2: "Hypnosis"*

*Procedure.* The twenty subjects who appeared to possess the "hypnotic aptitude" were specifically told that they were to be "hypnotized." Instead of instructions to "imagine" the above effects, they were given direct suggestions that such effects would occur. In addition, they were given direct suggestions of inability to say their name, age-regression, visual and auditory hallucinations, post-hypnotic amnesia, and post-hypnotic behavior.

*Results.* Sixteen of the 20 subjects behaved in the classical somnambulistic manner, i.e., they quickly and easily showed hypnotically induced dreaming, inability to say their names, visual and auditory hallucinations, convincing age-regression, post-hypnotic amnesia, and post-hypnotic behavior.

Three of the 20 subjects showed positive responses on most of the suggestions but failed to show convincing age-regression, did not carry out the post-hypnotic suggestion, and did not show post-hypnotic amnesia.

One subject did not respond to *any* of the suggestions.

*Discussion.* Why did four of the 20 subjects who appeared to possess the

"hypnotic aptitude" to a marked degree when asked to imagine various (hypnotic) phenomena fail to behave in a somnambulistic manner when told they were going to be hypnotized? One relevant factor is that all four of these subjects were overtly resistant during the "hypnotic" experiment; each stated (before the experiment) that he was "anxious about hypnosis" and each stated (after the experiment) that he tried to resist being hypnotized. However, six of the 16 subjects who behaved in the somnambulistic manner also stated that they were afraid of hypnosis and that they tried to resist the hypnotic procedure. Why were the six somnambulistic subjects (who attempted to resist) unable to resist any of the suggestions, why were three subjects able to resist some suggestions but not others, and why did one subject successfully resist all of the suggestions?

A tentative answer to this question appeared when an item-by-item analysis was completed on the 312 questions included in the Guilford-Zimmerman Survey and the abbreviated F-scale. We found that a series of questions could delineate a personality dimension which we provisionally termed, following Erik Erikson (23), "an attitude of basic trust toward oneself and others." Five typical questions from the Guilford-Zimmerman Test, for example, which appeared to indicate this attitude were as follows:

When you lose something you often begin to suspect someone of either having taken it or having misplaced it. (No.)

You have frequently felt like telling "nosey" people to mind their own business. (No.)

Some people become so rude that you feel the urge to "sit on them" or to "tell them off." (No.)

It is difficult for you to chat about things in general with people. (No.)

<sup>6</sup>The results with the other 50 subjects on this and the subsequent experiment are not immediately relevant to this discussion and are postponed for detailed comment to a forthcoming publication (13).

It is easy for you to act naturally wherever you are. (Yes.)

You enjoy getting acquainted with people. (Yes.)

When the subjects' answers on the questionnaires were analyzed in terms of this personality dimension, it was discovered that the only subject of this entire group of 20 who did not show "basic trust" was the one subject who had failed to show any hypnotic behavior in the second experiment.

*Conclusion.* This experiment appears to indicate the following:

(a) Subjects who seem to possess the "hypnotic aptitude" to a marked degree show different behavior when they are told that they are going to be "hypnotized."

(b) Subjects who possess both the "hypnotic aptitude" and the "attitude of basic trust toward oneself and others" and are not "afraid of hypnosis" behave as somnambulistic subjects.

(c) Subjects who possess both the "hypnotic aptitude" and the "attitude of basic trust" but are "afraid of hypnosis"—i.e., overtly resist "being hypnotized"—do not successfully resist; despite their overt resistance they behave as somnambulists or as good or fair hypnotic subjects.

(d) Subjects who do not possess the "attitude of basic trust" can successfully resist the hypnotic procedure and may not show any hypnotic behavior even though they may possess the "hypnotic aptitude" to a marked degree.

If the results of the above experiment are combined with the results of a series of related studies reported elsewhere (13), the following conclusion is indicated:

(e) Given a minimum of skill on the part of the hypnotist, the necessary and sufficient conditions for a subject to show at least some hypnotic behavior (in an experiment which the sub-

ject perceives as involving "hypnosis" or as involving an intimate relationship with another person, viz., a hypnotist) appear to be as follows: (a) the subject must possess the "hypnotic aptitude"—i.e., the ability quickly and easily to become and remain attentive, thinking about, and responsive to selected stimuli—and (b) the subject must possess the "attitude of basic trust toward oneself and others."

A second study which is in progress appears to lead to a similar conclusion as above. This investigation can be briefly summarized as follows:

*Rationale.* Binet and Féré (17), Erickson and Erickson (21), and Rosenthal and Mele (36) have found that some somnambulistic hypnotic subjects (who do not seem to possess prior knowledge of complementary color relationships) report the appropriate complementary colored after-images of suggested colors. It has generally been assumed that "a deep state of hypnosis" is necessary for this behavior. However, a recent study (9, 10) has demonstrated that some individuals (who have never been "hypnotized") can do the same thing when they are "normally awake," and it appears justified to tentatively assume that these relatively rare individuals, approximately 10 per cent of the population (13), possess the "hypnotic aptitude" to a marked degree.

*Progress report.* We found seven individuals who were able, when "normally awake," to "vividly imagine" and "project" colors which were followed by appropriate complementary colored after-images. These individuals had never been hypnotized, and they did not appear to possess prior knowledge of complementary color relationships.

In a subsequent experiment, the seven subjects were tested for hypnotizability and were given the Guilford-Zimmerman Temperament Survey and

the abbreviated F-scale. The results were as follows:

(a) In the hypnosis experiment, six of the seven subjects behaved as "natural somnambulists," and one subject behaved as a "poor" or "fair" hypnotic subject, showing hand levitation, eye catalepsy, and limb rigidity but none of the more complex hypnotic phenomena, such as visual and auditory hallucinations, age-regression, or post-hypnotic amnesia.

(b) On the personality questionnaires, six of the seven subjects showed the "attitude of basic trust toward oneself and others," and one subject did not show this attitude.

(c) The same person who behaved as a "poor" or "fair" subject in the hypnotic experiment also failed to show the "attitude of basic trust" on the questionnaires.

*Provisional conclusion.* These preliminary results with seven subjects appear to indicate the following:

(a) Individuals who seem to possess the "hypnotic aptitude" to a marked degree—i.e., who are able, when "normally awake," to "hallucinate" colors which are followed by appropriate after-images—behave as "natural somnambulists" in a "hypnosis" experiment if they also possess the "attitude of basic trust toward oneself and others."

(b) Individuals who seem to possess the "hypnotic aptitude" to a marked degree but do not possess the "attitude of basic trust" behave as "poor" or "fair" subjects in a "hypnosis" experiment.

#### CONTRIBUTORY FACTORS IN HYPNOTIC BEHAVIOR

Given a modicum of skill on the part of the hypnotist, the above conditions appear to be both necessary and sufficient for a subject to show some if not many of the hypnotic phenomena. However, additional factors appear to

be necessary for a subject to carry out all of the hypnotic behaviors. First of all, for the subject to show some of the more difficult hypnotic behaviors, such as negative hallucinations, the hypnotist must possess more than a minimum of skill; more precisely, the hypnotist must be able to manipulate adroitly his words and the situation in such a way as to lead the subject to believe that the suggestions are literally true statements (5).

Secondly, some of the hypnotic phenomena appear to depend on a unique physiological predisposition on the part of the subject. As Schilder and Kauders (39) have suggested and as Pattie (34) has indicated in his review of the literature, it appears probable that localized blisters can be induced by hypnotic procedures only in rare individuals who show an unusual lability of the vasomotor system, e.g., who show a predisposition to dermatographism and urticaria. Along similar lines, Kretschmer and Krüger (30) report that they were able to alter blood-calcium levels by hypnotic suggestion only in subjects who showed an unstable blood-calcium level prior to being hypnotized. Similarly, Gigon, Aigner, and Brauch (28) found that they could significantly affect blood-glucose levels by hypnotic suggestion in patients with abnormal and labile blood-sugar levels (i.e., in diabetics) but could not do so in normal subjects.

Furthermore, although an appropriately predisposed subject, i.e., a subject possessing both the "hypnotic aptitude" and the "attitude of basic trust," can be readily induced to show analgesia for brief noxious stimulation such as pinprick and to show posthypnotic amnesia for a limited period of time, something more is necessary for the subject to show analgesia to severe and persistent noxious stimuli, or posthypnotic amnesia lasting for a considerable period of time, or antisocial or dangerous behavior during hypnosis. If a

subject is not strongly motivated either to experience hypnosis or to please his particular hypnotist it is doubtful that he will continue to remain unresponsive to severe and persistent noxious stimulation (11, 12) or that he will long continue inhibiting all thoughts concerning the hypnotic experiment (4) or that he will long continue responding to the situation described by the hypnotist when given suggestions leading to antisocial or criminal acts.

Although this paper has emphasized the necessary and sufficient conditions for hypnotic behavior, it does not intend to imply that other factors are not important. They are very important. The skill of the hypnotist, the subject's motivation to experience hypnosis or to please his particular hypnotist, the specific relationship between subject and hypnotist, almost always play a very important role in hypnotic experiments. However, they do not always do so and they do not necessarily do so.

#### SUMMARY AND CONCLUSIONS

(a) Some subjects quickly and easily show some if not many hypnotic behaviors when they do not have favorable attitudes toward hypnosis, are not motivated to be hypnotized, and do not expect to be hypnotized. Other subjects, who very much want to experience hypnosis, show very little if any hypnotic behavior after numerous attempts by many hypnotists.

(b) During an hypnotic experiment, the "good" subject carries out a unique type of behavior: he becomes and remains selectively attentive, thinking about, and responsive to cues emanating from the hypnotist (and concomitantly becomes and remains selectively inattentive, not-thinking-about, and

unresponsive to other symbolic or concrete stimuli).

(c) The unique behavior which characterizes the good subject during a hypnotic experiment is an integral part of his behavioral repertoire before he participates in such experiments. During the course of normal "waking" life, the somnambulistic hypnotic subject, much more often than the poor hypnotic subject, becomes and remains for relatively extended periods of time responsive only to selected stimuli.

(d) This "hypnotic aptitude" appears to be both a necessary and sufficient condition for autohypnotic behavior and for hypnotic behavior in a situation which the subject does not perceive as involving "hypnosis" or does not perceive as involving a close relationship with another person.

(e) However, the hypnotic aptitude is not in itself a sufficient condition for hypnotic behavior when the subject is specifically told that he is going to be "hypnotized" or when the subject perceives the situation as involving an intimate relationship with another person, viz., a hypnotist. In this situation the necessary and sufficient conditions for hypnotic behavior appear to be as follows: (a) the subject must possess the hypnotic aptitude and (b) the subject must possess the attitude of "basic trust" toward oneself and others.

(f) The problem of "hypnotizability" is inseparable from the more general problem of personality development. Why are some individuals and not others able quickly and easily to become and remain responsive to selected stimuli? Why do some individuals and not others possess the attitude of "basic trust"? Only long-term genetic studies will be able to answer these questions.

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## THEORIES OF HYPNOSIS: A CRITIQUE AND A PROPOSAL

by Clarence Leuba, Ph.D.<sup>1</sup>

There would be general agreement, I think, that there is much truth in each of the main theories of hypnosis held during the past fifty years, but that none of them has proven adequate by itself to explain all the facts of hypnosis.<sup>2</sup> There has not been general agreement, however, regarding what are the really essential circumstances and procedures for the induction of hypnosis, nor about what are the unique and essential characteristics of the hypnotic state itself.

None of the theories of hypnosis has succeeded in teasing out of the numerous procedures, helpful in producing hypnosis, those items that are not only helpful but essential. Many procedures which can be helpful are nevertheless not essential; other procedures can be substituted for them. Thus, many persons have been hypnotized without any mention of sleep and without any visual fixation, though both of these are parts of classic procedures for inducing hypnosis.

There is at present no one standard generally accepted method for producing hypnosis, but rather, there are several main ones, each with many variations. Which techniques a hypnotist will settle upon may well depend on which ones he happened to be using when he had his first successes.

The hypnotic state, as repeatedly brought out over the years, involves heightened suggestibility, but this suggestibility seems to be directed only toward the hypnotist. There does not seem to be a general heightened suggestibility; the hypnotized subject can

be very critical of certain things or people. Furthermore, what exactly is suggestibility, and what circumstances are essential for producing a state of suggestibility?

If suggestibility is defined as the immediate and uncritical acceptance of an idea or course of action, complete concentration on what the hypnotist says should lead to suggestibility toward the hypnotist. Exclusive concentration on what he says implies the absence of any critical or other thoughts. The reactions conditioned to the symbols provided by the hypnotist are then likely to occur. Exclusive concentration on an idea as presented by the hypnotist is tantamount to accepting it uncritically and hence to being suggestible, at least with respect to the hypnotist. Such concentration will be shown presently to be indeed an essential factor in the production of hypnotic phenomena.

Ideomotor action, as has also been frequently maintained, is undoubtedly involved in the production of some hypnotic phenomena such as arm levitation or eyelid closure. Ideomotor action is now thought to follow from previous conditionings of muscular reactions to verbal stimuli. First the heard or spoken word becomes associated with the action which it denotes; under favorable circumstances, it can elicit that action; finally just thinking the word may do so. But ideomotor action, as in conditioned responses to verbal stimuli, is present in the waking as well as the hypnotic state. It is inadequate, therefore, by itself to explain hypnotic phenomena; there must be something else, some conditions present during hypnosis which are not present usually at other times. Ideomotor action is a necessary but not suf-

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<sup>2</sup> These theories have been well reviewed in a number of places. See, for instance, Pattie (1).

ficient basis for much hypnotic behavior.

It should also be mentioned that capacity for vivid imagery may be a necessary prerequisite for some hypnotic phenomena, hallucinations for example.

A widely held theory of hypnosis is that the essential condition for hypnosis is the establishment of certain motivations in the subject and of a certain relationship to the hypnotist. The subject becomes motivated to please the hypnotist and does so by acting as a hypnotized subject is supposed to act. The subject tries to play the role of a hypnotized person as, chiefly under the tutelage of the hypnotist, he conceives that role to be.

It is true that a good relationship is ordinarily established between a subject and the hypnotist; the subject would like to be hypnotized and wants to please the hypnotist and to do what a good subject is supposed to do. But, again, is this sufficient? Can one produce analgesia, for instance, just by trying and wanting to please someone? Universal human testimony is to the effect that the influence of motivation can be only an indirect one here; it can prompt a person to search for methods which will enable him to be less aware or even completely unaware of his toothache or other pain, but merely wanting pain to disappear has never by itself made it disappear (2). Furthermore, a subject may be hypnotized even if he does not care to please the hypnotist and does not even know that he is being hypnotized.

My main objective in this paper is to bring together data from psychology, from everyday life, and from underlying similarities in the methods used in inducing hypnosis, to test the hypothesis that *the essence of hypnosis* consists in creating a willingness and an ability, especially on the part of a person in whom ideomotor action is strong and imagery vivid, to concentrate exclusively on the situations,

concrete or symbolic, which the hypnotist presents to him (2). Hypnotic procedures and techniques are valuable in the measure that they contribute to the development of that willingness and of that ability. This hypnotic state could be defined negatively as a condition in which there is relative inattention to all internal and external stimuli, except those mentioned by the hypnotist; the subject has detached himself from them.

If this hypothesis is correct, the phenomena produced during hypnosis should also occur in everyday life when circumstances happen to be such as to promote exclusive concentration on matters which in hypnosis are suggested by the hypnotist. People can be expected to have hallucinations, for instance, whenever circumstances are such, as in light sleep, that they have imagery on which there is complete concentration without distractions from the physical or social environment. We will return presently to the occurrence in everyday life, when there happens to be exclusive concentration, of typical hypnotic phenomena.

I will first examine whether the methods found helpful in the induction of hypnosis would indeed tend to produce a state of complete and undistracted concentration called for by the hypothesis just stated. Then, we will see whether hypnotic phenomena actually occur in everyday life when there happens to be exclusive concentration. Finally, we will see if the operation of certain now well established principles of learning, perception, and thinking, coupled with such concentration—whether present in hypnosis or in certain favorable circumstances in everyday life—could lead to the production of hallucinations, analgesias, amnesias, etc.<sup>3</sup>

<sup>3</sup> The sponsoring of this symposium by the Division of General Psychology of the  
[footnote continued on next page]

First, then, let us examine more closely the procedures helpful in inducing hypnosis. Do they in fact tend to produce exclusive concentration on what the hypnotist says? By exclusive concentration is meant, of course, complete attention to what he says and inattention to everything else, including any possible contrary or critical thoughts. Are circumstances actually made such that either those thoughts do not occur or, if they do occur, the person will suppress them; that is to say, that he will turn quickly from them to what the hypnotist is suggesting?

Closing the eyes and quiet surroundings are obviously helpful in keeping out possibly distracting external stimuli. Reclining in a comfortable chair or couch, relaxation, and sleepiness diminish the alertness necessary for thinking about a variety of matters. They also tend to break up the muscular basis for various sets and attitudes which ordinarily influence the train of thoughts. Concentration on a simple visual stimulus or on any simple phenomenon gives the subject something innocuous to do when he is not listening to the hypnotist and thus prevents attention to possibly disturbing or critical thoughts; and, if such thoughts do occur, it is something to

turn to. It serves to sweep everything else except awareness of the hypnotist out of consciousness. Once attention is completely on the hypnotist, it becomes unnecessary. The subject can then be hypnotized at a signal, signifying a shift to concentration on the hypnotist.

The prestige of the hypnotist, respect for and trust in him, belief that what he says will actually happen, and wanting to please him, all make the arousal of antagonistic, critical, hostile thoughts unlikely. Finally, as all advertisers know all too well, mere emphatic confident repetition of an idea tends to leave it eventually in the undisputed center of attention.

Barber found that the individuals who passed most readily into deep hypnosis (somnambulism) had been able "to become selectively inattentive to stimuli long before they had ever been hypnotized." For example, they had always been able to concentrate on their studies by blocking out other thoughts and stimuli (3). P. C. Young found that his best subjects were easily able to detach themselves from their surroundings in their daily life (4). Barber concludes that "the life histories of somnambulists, their introspective reports, and careful observation of their behavior during hypnosis indicate that the somnambulist can more whole-heartedly accept the operator's restructuring of his thoughts and perceptions because he can maintain a more consistent and complete detachment from all other stimuli and all other thoughts during the hypnotic relationship." (3, p. 156.)

The crucial importance of undistracted concentration for the creation of hypnotic phenomena is further indicated by the fact that when such concentration happens to prevail in everyday life those phenomena may be produced even though there has been no induction of hypnosis. For example, when reality is very harsh and people withdraw from it to concentrate ex-

American Psychological Association may be symbolic of a new union of psychological forces which could presage a major development in our understanding of hypnosis. Hypnosis is no longer an isolated phenomenon of abnormal psychology, nor should it be regarded as abnormal. There are now societies for the experimental as well as for the clinical study of hypnosis. Hypnosis is under investigation not only by psychologists whose main background is in general or experimental psychology but also by those interested in the extensive clinical and investigatory applications and study. It may be that concepts and principles from general psychology, especially from the areas of perception, learning, and thinking, will help to explain hypnotic phenomena.

clusively on their own more pleasant imaginings and become oblivious of their surroundings, their imaginings are likely to take on the reality of those under hypnosis; they become hallucinations.

As previously noted, all of us have hallucinations during our dreams; we are then concentrating exclusively on our imagery and are oblivious of our surroundings. All of us, too, have been analgesic at times; while absorbed in the detective story we may lose awareness of the toothache or other painful stimulation, or when similarly absorbed we may be temporarily deaf, as we fail to hear the door bell or a question directed at us. We have all also been hypersensitive at times as we expected and concentrated on the pain from the dentist's drill or an unpleasant taste or smell. All of us, too, have been unable at times to carry out a really simple and easy action as we became convinced that we could not do it. As soon as we concentrated on not being able to jump across the two-foot chasm or the puddle of dirty water we were rooted to the spot and really could not jump across it. But the moment our confidence was reestablished and we thought exclusively of performing the action successfully, we could easily do it. All these phenomena, as also the amnesias of everyday life such as forgetting a well known name, are commonplace; I would not mention them were it not that, being taken for granted, they are apt to be overlooked as helpful in understanding similar phenomena which appear so mysterious, dramatic, and unusual when induced during hypnosis.

The question next arises: are there psychological principles which will explain why these phenomena occur, provided only that there is exclusive concentration on appropriate matters? I believe there are.

The modern conception of ideomotor action as following from the condition-

ing of muscular reactions to verbal stimuli has already been mentioned as one such principle. Voluntary behavior, as contrasted with forced or reflex action, is presumably possible only after appropriate words have become conditioned stimuli for it. There must be a stimulus before behavior can occur, and for voluntary behavior that stimulus is ordinarily a word or pattern of words. In adults these may become so abbreviated that introspective awareness of them becomes difficult; it is only in the child that this verbal control is obvious as the child speaks the words such as "I'm going to jump, watch me jump."

A good hypnotic subject must presumably not only be able to concentrate on the words suggested by the hypnotist but have previously formed strong connections between words and the actions they denote. He will raise his arm or sway back and forth as the hypnotist suggests those actions if there is exclusive concentration on the words denoting those actions and the actions have previously been strongly conditioned to the words.

On the other hand, movement will not occur if a number of mutually exclusive movements have been simultaneously aroused as in a conflict situation. Thus an arm may be held rigid and tense if symbols signifying conflict, uncertainty, or inability to move are being suggested; such symbols are presumably conditioned stimuli for the innervation of antagonistic muscles holding the arm rigid and paralyzed.

Well known principles of perception seem to be involved in the induction of hypnotic analgesias, illusions, and hallucinations. It is well established that we perceive not what is actually present in reality, but only selectively and with distortions based on expectations arising out of past experiences. Imagery stemming from that experience is presumably superimposed on reality to reinforce this and to distort that; hence

reality may conform closely with the imagery we already have in mind. So if the hypnotist can succeed in creating concentration on a mental image of a beautiful girl and if the subject habitually has vivid imagery this may transform a drawing of a witch into a beautiful girl. In an illusion during hypnosis it is the hypnotist who creates the expectations; in everyday life they are created by common experiences, such as that people whose heads come close to the ceiling must be very tall indeed; so, in the famous distorted-room demonstration, one man appears to be a giant and the other a dwarf.

But the hypnotist, if he is successful, secures not only concentration; he gets exclusive concentration. There may be no bits of reality with which to compare imagery and thereby to set it apart from reality as just imagery. For the moment, imagery is the only reality; it becomes hallucinatory. The imagined dog seems actually to be present and to be behaving as dogs usually do.

The selectivity of perception is helpful in explaining analgesias. If the hypnotist can secure the subject's exclusive concentration on, say, the right hand, the subject may not perceive a pin prick given to the left hand. The insensitivity of the left hand is probably not something happening to that hand. To make it insensitive the subject may have to concentrate exclusively and intensively on something else than the left hand. He must either come to the hypnotic session with the habit of doing this, when he wants to become unaware of stimulation, or else he must learn to do it during the course of the sessions.

The absence of necessary cues and the principle of retroactive inhibition can be helpful in explaining the amnesias induced during hypnosis as well as those occurring apparently spontaneously in everyday life. The subject may concentrate on stimuli which are

not cues for what he is being asked to recall, or he may repress what he is supposed to recall, by concentrating on other related matters. When asked "What is your name? The college you are attending? The place where you work?" he may concentrate, for instance, on the location of the place where he works or on such a phrase as "I don't know." The hypnotized subject may set himself to give answers other than those expected. To the inquiry about his college, he may respond with the names of others. These may then inhibit the recalling of the name of the actual college. To a certain agreed-upon signal, such as the hypnotist clapping his hands, the name will immediately be recalled. The name has been connected without interference from any other associations with the handclapping. (Actually, what the subject is concentrating on is largely a matter of conjecture. Careful systematic introspective reports would be needed to shed light on this matter.)

It has been observed that a subject will exhibit posthypnotic amnesia or other posthypnotic phenomena only if he believes that the hypnosis session is not yet really terminated and that he is still expected to behave like a hypnotized person. On the other hand, if the subject believes that the hypnotic procedures are over, he is less likely to carry out a posthypnotic suggestion. A signal or other stimulus is maximally effective when imbedded in its original context. The cue for forgetting a name or for carrying out some action such as asking for a cigarette is part of a total situation; in this case, of a situation which includes another person perceived as a hypnotist. When this person is perceived in another relationship—as a friend, associate, or teacher—the cue becomes different. As is well known, the whole can determine one's perception of the parts.



I have advanced the hypothesis that hypnosis is essentially a state in which a subject is willing and able to concentrate exclusively on whatever the hypnotist says and that the phenomena of hypnosis are the result of the operation of well established principles of perception, thinking, and learning in the above mentioned state. This hypothesis seems to be in harmony with the techniques actually found helpful in the induction of hypnosis and with the situations in which typical hypnotic phenomena occur in everyday life. These techniques and situations are ones likely to produce complete concentration on certain imagery and ideas. This shows that the hypothesis could be correct, but it does not prove that it is actually correct.

The hypothesis is supported, however, by the fact that subjects who go quickly into deep hypnosis are ones who in everyday life have shown an

ability to exclude everything except what they want to concentrate on. They can detach themselves from what is irrelevant to them at the moment. Most would-be subjects have the willingness to do this, but they have, with help from the hypnotist, to learn how to do it; and this is by no means easy. Most subjects do not succeed in becoming deeply hypnotized.

A critical test of this hypothesis, of course, would consist of comparing the effectiveness of hypnotic procedures aimed exclusively at developing a willingness and ability to concentrate on what the hypnotist says with the efficacy of techniques aimed primarily at other objectives, such as developing a desire to please the hypnotist. We need experiments of that sort for a thoroughgoing scientific approach to an understanding of the fundamental nature of hypnosis.

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## THE FUTURE OF HYPNOSIS

by G. H. Estabrooks, Ph.D.<sup>1</sup>

This presentation will avoid, in so far as possible, reference to theory, a subject which has been considered by Drs. Barber and Leuba. Discussion will be confined to those cases, individual or group, wherein hypnosis has been employed intentionally by a competent operator. The concept of hypnosis as including direct or prestige suggestion in such situations as those involved with the orator or the television commercial would be too broad for the limited scope of this paper. The paper will be addressed largely to a statement of problems, of probabilities and possibilities based on the facts as they now exist in the fields of psychology and medicine. The interpretations of data from those areas are often contradictory: "If you are not confused you are not well read."

It seems well to begin the presentation with a field, medicine, in which hypnosis has received fairly wide acceptance. The American Medical Association gave its qualified approval in 1958, and its British counterpart has done likewise; the Roman Catholic Church has also approved. The removal of these roadblocks has had a very salutary effect, and it is to be hoped that the behavioral sciences, in which this paper is largely interested, may shortly report similar progress.

However, there is always the danger of not seeing the woods for the trees. Certain very interesting trends seem developing which are of importance to the future in hypnosis. It should be noted that in the field of medicine, as in all other fields of science, the prac-

tical and the theoretical may appear to have divergent approaches. The practitioner "on the firing line" may tend to use one criterion—does it appear to work? The clinical evidence that hypnosis does "work" appears to be increasing daily.

One very interesting trend is becoming evident, namely, the composition of the groups who attend the various workshops or seminars on hypnosis. The majority of those in attendance are physicians and dentists. Psychiatrists, however, and psychologists are in a minority. As a result of acquiring a knowledge of hypnosis, there is a learning of the language and the techniques of the psychiatrist. The obstetrician talks of time regression, projection, distortion, and of frustration, conflict, compensation. This psychiatric orientation of the general practitioner is a healthy and growing trend.

Another trend is the increasing use of hypnosis as an anesthetic. It seems that, in any field approaching surgery, the interest concentrates on three phases: before, during, and after. The *before* is well illustrated in the case of the so-called dental cripple to remove the fear of the dentist's chair; *after*, in the alleviation of post-operative symptoms. It might be contended that in these situations hypnosis is not used as an anesthetic in the true sense of the word. The point is debatable. During the actual operation, great latitude is possible as to the use or non-use of chemical anesthetics.

This presents a new vista and supports the general impression that about 90 per cent of normal people can be hypnotized to a degree satisfactory for medical and dental purposes. This emphasis on the lighter states as a valid clinical procedure is becoming evident. Until recently, the utility of hypnosis

<sup>1</sup> Department of Psychology, Colgate University, Hamilton, New York. This paper was read as part of a program on "The Nature of Hypnosis" at the annual meeting of the American Psychological Association at Cincinnati, Ohio, on September 9, 1959.

in any situation was correlated, in general, thinking with the depth of the trance attained.

An innovation in the field of medical hypnosis which seems to offer great possibilities is its use in painful terminal illness, as reported by Rosen (19), but cancer is not the only field of application. Hypnosis here has the great advantage that it tends to eliminate pain or at least permit reduction of chemical sedatives to a minimum degree. It is a curious thing that the greater the pain, usually the greater the ease of hypnosis—perhaps a defense mechanism on the part of the body.

A further curious and recent technique has definite application in the field of medicine as well as in other areas. Time distortion in hypnosis is a matter of a certain amount of extensive inquiry. In its application, the subject can have the experience of one hour in ten seconds. Is this experience genuine, or is it merely retroactive falsification? The fact remains that it works for both time expansion and time contraction, as reported by Cooper and Erickson (2), and Erickson and Erickson (4). Thus, an hour in the dentist's chair can result in a subjective feeling of 30 seconds, or five minutes in the doctor's office can lead to a subjective feeling of five hours. Either situation has its use in medicine.

Another startling disclosure may have its repercussions on surgery. Cheek (1) maintains that the patient under deep chemical anesthesia may hear and remember on the unconscious level much of what happens in the operating room. Recent unpublished research may indicate not only that he hears, but that the remarks of the operating personnel have an effect on his post-operative state of mind. If this is substantiated by further research, the implications are fairly obvious.

It would be well to sound a word of caution against certain attitudes which

have become prevalent and which can be well illustrated in the field of medicine. In this respect, direct suggestion is under the ban. For example, a dictum, "Never remove the symptom unless the cause is understood," is much emphasized. Its validity is greatly open to question, since much of medical practice is direct symptom removal, as only a little thought makes apparent.

Another dictum is generally followed, that the unconscious background of symptom-complexes must necessarily be made conscious to effect a cure. Reasonable and thoughtful consideration of the extensive role of the unconscious in daily living and functioning renders this dictum much less credible.

Hypnosis may have wide application in the military field. Various suggestions have been made by Estabrooks (6) along these lines, and the applications in question may far exceed those he made.

What are the future sensitive areas in the field of straight psychological research as opposed to that of medical practice? This bifurcation is, of course, artificial. The psychologist is familiar with the problems in this area, and familiarity does not breed contempt. Whitehead once wrote that the first duty of a scientist was to seek simplicity—and then to distrust it. The views of Bernheim, simple, clear, easily comprehended, were useful in the formative years of the science. They were true, as are all scientific facts and theories, "until further notice."

The physiological aspects of hypnosis have been recently reviewed by Crasileck and Hall (3), and more adequately by Gorton (11) previously. The reviews are impressive in that they accent the difficulty of research in this field. The situation is very similar in other areas. What are the basic personality traits which lead to hypnotizability? This is a question of interest to Barber, Weitzenhoffer (20), and oth-

ers. Is regression, as questioned by Orne (16), genuine or not? Is the post-hypnotic state a recurrence of the hypnotic trance, as reported by Erickson? (5). Is the conditioned reflex similar to hypnosis, as has been suggested?

Such problems as those mentioned above are familiar, basic, and will be solved only by painstaking and lengthy research. There are others equally important, which have not received as much attention in the research field. Here it is necessary to turn prophet since there is a lack of clinical and experimental evidences.

Universal hypnotizability would be one such problem. Is everyone susceptible to deep hypnosis, granted techniques which have not yet been developed? Does the "brainwashing" reported by Lilly (13), which produces a state of mind which is certainly abnormal, constitute some indirect lead to other understandings? Certainly it produces behavior of a markedly different character.

Then again, it seems to be a fact that children between the ages of, say, seven and fifteen are extremely susceptible to deep hypnosis. The one-to-five ratio with the adult becomes four to five within these age brackets. Is it possible to continue this susceptibility into the adult years? If so, it would be a very important and perhaps a very useful contribution in the field.

Finally, the areas of learning and of learning-theory pose problems of the greatest importance. Certainly there is much to be learned in these areas even at the experimental level, and which would be very provocative to future thinking. For example, take the matter of hypnosis in juvenile and adolescent adjustment. The problems obviously are in the field of learning.

Consider the following case reported by a local physician, a general practitioner who is rapidly learning the importance of the human element. A boy

of fourteen was failing in school. Mathematics was the weakest of all his subjects. In one hypnotic session it developed that he refused to work because of hostility to his mother and jealousy of a brother. This situation was discussed in hypnosis, and the patient was given insight, followed by positive suggestions that in the future he would like mathematics.

At the beginning of the next semester he registered for an extra course in mathematics in addition to the required course in algebra. At the end of the semester he received the grades of 92 and 93 and was a leader in his class. An instance like this is most provocative of thought. It illustrates the fact that the so-called general practitioner can use what, for want of a more informative term, is called "depth psychology" very effectively. It also presents a very challenging field for further research.

Estabrooks (7) reports the following: A sophomore in college was brilliant and lazy. After a consultation with his father, hypnosis was used. The sophomore in question was an excellent subject. The operator followed Jung's general theory that real abilities may lie in the unconscious and never come to the surface or come to the surface too late for practical purposes. The boy in hypnosis finally expressed definite interest in botanical illustration. This was news to everyone, and through post-hypnotic suggestion he was placed in courses in Fine Arts and Botany. His grades approached the Phi Beta Kappa level, and he succeeded as an excellent botanical illustrator, illustrating several books. Again, this type of finding is most provocative, and constitutes an area for future research, with implications for the theory of learning.

Estabrooks (8) also reports the following: A veteran of World War II, married and the father of two children, graduated from college. A man

of average academic ability, he had virtually no choice but to enter industry. The personnel men from a national concern placed him definitely on the reject list. Since he was an excellent hypnotic subject, he was systematically and simply trained by direct suggestion for ten days to develop the attributes presumably required in a successful business man. He reversed his position dramatically, became the first choice of the company in question, and has done very well with them since he became a member of the organization. This case seemed to call for a direct frontal attack, since there was no evidence of personality maladjustment and the man's mind was already made up as to his vocational choice. It was largely a case of motivation and integration in the field of learning.

Finally, consider the matter of juvenile delinquency. The Gluecks (9) have constructed a prediction scale which they state will detect 60 to 70 per cent of the juvenile delinquents by the age of six. One wonders about re-education and the ease of hypnosis at this age and immediately successive years. Lindner (14) states that hypnoanalysis is an effective instrument in the rehabilitation of the criminal.

The following case by Erickson, reported to the author, is of somewhat different tenor, but is provocative from the point of view of learning and learning theory. An architect was having difficulty planning a special type of building. He simply could not formulate plans and he was becoming discouraged. In deep somnambulism he walked to the blackboard and outlined the building in question. Later he was returned to that room in waking state. His first reaction was, "Those are my plans, who stole them?" This whole matter of unconscious cerebration, to use a somewhat antiquated term, and the process of making it available to the conscious mind pre-

sents a fascinating field for future research.

At times it is well to advance outrageous hypotheses. Do some results require an explanation which goes beyond learning and the learning theory? This is, of course, heresy, but heretics can be interesting people. Can we lengthen the psychic spectrum and uncover latent abilities which do not fall within the realm of learning? What about the electrodynamic force field in biology described by Ravitz (18)?

Time distortion in hypnosis presents interesting non-medical applications: the creative thinking of one hour in ten seconds! Results are impressive, no matter what the explanation. It may be possible that the mind is working at a speed which up to the present has not been taken account of in learning theory. It may be retroactive falsification. Or it might just be possible that new resources are being tapped which are beyond any present theory of learning.

Or take the case of the so-called lightning calculator as described by Myers (15). It does not appear that this curious ability is learned in any accepted sense of the word. Is there any possibility of developing it in so-called normal people? Evidence seems to indicate that it does exist. If so, it is in the "mind"—probably in the unconscious mind, and hypnosis is an excellent device of probing and developing hidden capacities—once again a challenging line of thought on which very little has been done.

But certain findings could be more within the acceptable bounds of science. Consider this matter of hidden memories. Penfield (17) in Montreal has demonstrated their existence on the physiological plane. Numerous authorities in hypnotism have demonstrated the same on the mental level, if such a bifurcation is permissible. Is it possible to make these hidden memories accessible to the conscious mind

on demand? If it were possible, human efficiency would be greatly raised in certain areas. It is a fascinating possibility, but up to the present little work has been done in this area.

In short, is the concept of synthetic genius, or perhaps emergent genius, too preposterous for science at the present moment? Is it possible to uncover latent abilities in the average human which would place him in the genius class? Suppose it were possible to place latent memory under the control of the conscious mind or to do the same with those curious abilities which produce the lightning calculator. Very useful to be sure, but the resultant individual would probably not be classed as a genius. The element of creative thinking is not present, and this creativity may well be the mark of genius. Time distortion in hypnosis has given an interesting lead, but much more work is necessary before we know the pros and cons of this unique technique.

Consider the case of Patience Worth, reported by Yost (21), which naturally leads to a consideration of multiple personality. The facts of the case will probably stand up under scientific scrutiny. Here we have a possible example of genius, superimposed on a very normal personality. To be sure, the genius claimed to be the personality of a girl who had died in the reign of Queen Elizabeth. This may not be

acceptable. It is immaterial to the present line of thought.

Multiple personality is a very familiar phenomenon and apparently, or more probably, induced personality aspects can be produced with the use of hypnosis, according to Harriman (11). That being so, why cannot the type of emergent genius illustrated in the case of Patience Worth also be produced in the normal person? At present, science cannot do so, despite its familiarity with the phenomenon of multiple personality. Therefore, is it impossible? The impossible merely takes a little longer.

Of course, some people would take the stand that Patience Worth was exactly what she claimed to be—a disincarnate or reincarnated spirit. This brings up the entire matter of psychic research. There is general agreement that these phenomena, if genuine, are mediated through the unconscious mind. It would seem logical that future research along these lines should stress heavily the use of hypnosis and a framework of reference within the natural laws of the universe.

The preceding suggestions for hypnosis in the future have been far from exhaustive. Hull (12) many years ago published an article in which he mentioned over one hundred projects in hypnosis worthy of doctoral theses. He added that he had merely scratched the surface. That remark holds for this paper.

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## DISCUSSION OF THE PAPERS OF DRS. BARBER, LEUBA, AND ESTABROOKS

By Ernest R. Hilgard, Ph.D.<sup>1</sup>

Both Dr. Barber and Dr. Leuba arrived at similar conclusions about the distinguishing characteristic of the good hypnotic subject: a good subject can remain exclusively attentive to what the hypnotist wishes him to attend to and inattentive to everything else. This describes hypnosis in terms of a category familiar within general psychology, namely, attention.

I believe that both Dr. Barber and Dr. Leuba have asserted an important characteristic of the hypnotic trance, but it is necessary to move from a *characterization* of the trance to an *explanation* of it. As explanations, both point to the similarity between hypnosis and everyday life, and both point out that those who attend well within hypnosis are those who concentrate well outside hypnosis. Both suggest the need for further experiments to back up their conjectures.

My own feeling is that both of these accounts have a sort of nineteenth-century ring about them, as though they were written before we knew anything about anxiety, dependency, identification, transference, and the rest. There is the recognition of the interpersonal relationship, of course, because the subject must attend to the hypnotist, and must be willing to accept what he says. But why are some willing subjects able to do this, others not? I find the account of William James, for example, as modern-sounding as these statements. What I miss is a more dynamic, personality-oriented kind of discussion. In fairness to the speakers it must be pointed out that they have elsewhere dealt in these other contexts, and perhaps something about their own preoccupations in connection with this symposium led them to feel that these other conjectures were not relevant.

Let me be a little clearer about what I miss. In our own investigations at Stanford of the personality correlates of susceptibility we have followed our hypnotic sessions with a searching interview, to try to discover what produces the kind of subject who can give up control and pay attention to the hypnotist as required by the theories of Barber and Leuba. One of our findings is that among college students who grew up as *only children* or as *the only*

*child of his sex* a higher proportion are refractory to hypnosis than among those who have *like-sexed siblings*.<sup>2</sup> The result is statistically significant and holds alike for the men and women in our sample. I cite this finding as indicative of something that would give a background for behaving in the way required of a hypnotic subject. My guess is that it has to do with being comfortable in new situations, lacking in anxiety, not threatened by loss of control. If it should turn out that these are the conditions under which one can pay good attention, then the theory would be one more to my liking. This is not a matter of simple preference, for I believe (if some such theory turned out to be correct) that it would explain more about hypnotic behavior than the attention theory explains, while covering everything that the attention theory covers. It is the lack of an ego-theory, a theory of interpersonal behavior of a dynamic sort, that causes me to express some dissatisfaction with the attention theory as presented.

The paper by Dr. Estabrooks is of a different sort. His hypotheses did not seem to me preposterous. We need daring hypotheses, but at the same time we need the checks of ordinary scientific scepticism. I am convinced that the phenomena within hypnosis show all the lawfulness of other kinds of phenomena studied by psychologists. We need to establish these lawful relationships far better than they are established at present, and then our theories can be tested by how well they fit what has found to be so.

By F. J. Kirkner, Ph.D.<sup>3</sup>

The thinking that has been presented in these papers should go a long way toward contributing to a better understanding of hypnosis and such understanding may have some bearing on the course it takes in the future. There are many facts about hypnosis that need to be taken into account in theorizing about it. The speakers are fully aware of this problem, and they need to arrive at a working hypothesis with the rec-

<sup>2</sup> Hilgard, E. R., and Lauer, Lillian W. Birth order and presence of like-sexed siblings as affecting susceptibility to hypnosis. (Paper in preparation.)

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ognition that many of the factors seemingly important to their respective theories may very well be important in certain cases but vary from one subject to another.

After presenting and weighing evidence, Dr. Barber comes to the conclusion that the "... necessary and sufficient conditions for a subject to show ... classical hypnotic behaviors are ... (a) the subject must be 'motivated' only to the extent of being willing to listen to the words of the hypnotist and (b) the subject must be able to become and remain attentive, thinking about, and responsive to selected stimuli ...". Such factors that may contribute to these conditions as the skill of the hypnotist and interpersonal relations are not dismissed as unimportant, but he has found evidence that indicates they neither need to play a determinant role nor "do not always do so." Dr. Leuba states, "We have advanced the hypothesis that hypnosis is essentially a state in which a subject is willing and able to concentrate exclusively on whatever the hypnotist says and that the phenomena of hypnosis are the result of the operation of well established principles of perception, thinking, and learning in the above mentioned state." In this statement hypnosis is viewed as a natural process in terms of established psychological principles.

In the application of these principles to the functions of everyday life, it seems that the population as a whole would have the ability to perform most of the classical hypnotic behaviors, in fact, that nearly every one experiences these behaviors more or less frequently during a life time. Perhaps such a supposition would need further confirmation. The expression of the behavior characteristic of hypnosis, such as alteration in sensory and motor functioning, may develop when a particular set of conditions occurs, whether hypnotic procedures are or are not employed.

Dr. Barber, in referring to a number of investigators, leads us to the conclusion that the "good" subject has a tendency to be able to sleep at will and show hypnotic or trance-like behavior in everyday life. In other words, this is another way "of saying that the good subject is predisposed to become and remain attentive, thinking about, and responsive to selective stimuli."

With the supposition that most people have the ability to experience classical hypnotic behaviors on the basis of everyday life experiences and those that are predisposed to concentration on selective stimuli make good hypnotic subjects, the

authors raise the significant question of why one subject can concentrate appropriately and another cannot.

If our generalizations about hypnotic depth or degree of trance state are correct, the subjects usually range in their responsiveness from the insusceptible to the somnambulistic state. In terms of "depth" of responsiveness we might say that only about 20 or 25 per cent of the subjects are "good" subjects.

For those people who are or who have a capacity to be able to concentrate on selected stimuli in a manner productive of hypnotic behavior, the why and how are provocative questions. What would be the source of this aptitude or ability? Using the term aptitude in an innate sense, does it have a strong propensity to appear, or is this ability a matter of development through training? In relation to the operator, hypnosis appears to be a learning process and is sometimes structured in this manner. The responsiveness of subjects may improve, and subjects prepared for experiments are sometimes referred to as "trained subjects." What bearing does the history of the role and development of the individual have on his responsiveness to the hypnotic phenomena?

I think I see in these three papers the willingness to be guided by observations, the idea that the body of knowledge of hypnosis is subject to continual increase, and that the potentialities of its contributions to mankind are not fully explored or understood. In such a setting, Dr. Estabrooks ponders the future of hypnosis with cautious respect. It seems to me that some of the more significant aspects of his paper concern the increasing acceptance of hypnosis since World War II, the success with which hypnosis has been applied by the medical and dental practitioner, the questions it has provoked in psychopathology and psychotherapeutics, the desire for more reasonable and applicable knowledge in "psychodynamics" or psychological theory, the willingness to "advance outrageous hypotheses," and, what is implicit in these papers and this panel, an interest in further understanding of the nature of hypnosis. Also, there seems to be an upward trend toward more teaching and research in hypnosis in the universities. Much of the prejudice against hypnosis has diminished in the past ten years as knowledge of hypnosis became available to the clinician.

By Frank A. Pattie, Ph.D.<sup>4</sup>

While I find myself in agreement with Dr. Leuba on many points, I cannot accept the statement that "The absence of necessary cues and the principle of retroactive inhibition can be helpful in explaining the amnesia induced during hypnosis." Dr. Leuba himself undermines his statement on cues to recall by pointing out that the cues present, if any, are a matter of conjecture and that careful investigation is needed.

Retroactive inhibition is the deleterious effect upon recall of something learned which is produced by more recent learning. For example, if one learns a list of words A and during the next fifteen minutes learns another list B, fewer items of list A can be recalled than would have if the 15 minutes spent in learning list B had been spent resting.

Some psychologists (1) extend the concept and make it include the decrease in recall of learned material which has been found to follow an emotional shock (the subject's chair collapses, a pistol shot is heard, etc.).

The loss in recall in both of these situations is mechanical in nature; that is, it is not a motivated or purposive forgetting but a result of prior learning or an emotional shock, neither of which has any personal meaning for the subject, since the learning may involve nonsense, and the emotional shock may be merely a startle reaction.

The forgetting due to retroactive inhibition and the forgetting in post-hypnotic amnesia differ in a way which makes impossible, in my opinion, the explanation of one by reference to the other. This difference is that, while one cannot *learn* to show more or less of the effect attributed to retroactive inhibition, one can *learn* to achieve more and more post-hypnotic amnesia. A subject who after his first trance remembers all events of the period of the trance may in subsequent trances forget more and more and finally achieve what appears to be complete post-hypnotic amnesia for events of the trance period. This fundamental difference between these two phenomena makes it difficult, if not impossible, to equate them.

Furthermore, there is no procedure (ex-

cept relearning of the affected material) that may be used to abolish the effects of retroactive inhibition. The post-hypnotic amnesia is shown by the subject when he is not in trance; it can be abolished when the subject again goes into a trance, either spontaneously while performing a post-hypnotic suggestion or as a result of an induction procedure. The two phenomena differ therefore in that one of them is reversible without relearning and the other is not.

The statement, "It has been observed that a subject will exhibit post-hypnotic amnesia or other post-hypnotic phenomena only if he believes that the hypnosis session is not really terminated and that he is still expected to behave like a hypnotized person," is correct for some situations but not for others. As an example, I cite the case of a child who is hypnotized by a dentist and has amnesia for the work done in the operating room. The dentist formally dehypnotizes the child. On the way home and again a day later the child's mother cannot elicit any memories of the trance period from her child. Certainly it would strain our credulity if we were told that the child thinks "that the hypnosis session is not yet terminated" and that he is "still expected to behave like a hypnotized person" when talking with his mother and the dentist is far away.

Dr. Barber's paper arouses the hope that he will soon devise a test or a personality inventory which, when administered to prospective subjects, will allow us to predict the depth of trance which these subjects will attain.

The idea that subjects who have produced blisters are persons with an unusual vasomotor lability is still merely an hypothesis, however plausible it may be. In the 11 cases covered by my review (2), two subjects were reported as having "lively vasomotor reactions" and one as having "dermatographia of medium grade." In a later case not covered by my review (3) no dermatographia was reported.

It should be noted further that three experimenters reported that the place at which the erythema and blister occurred was not the exact place that had been stimulated. In one case the blister did not develop at the place touched on the left arm but at a symmetrically located place on the

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right arm. The most common characteristic of the subjects who produced blisters was hysteria (8 of 12 cases).

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## BRIEF CLINICAL REPORTS

### THE CONTROL OF INAPPROPRIATE BLUSHING

by Anthony J. Summo, Ed.D.<sup>1</sup>

Blushing is a normal mechanism which occurs during an autonomic crisis and which is necessary for the adjustment of the organism to the situation which has aroused the sympathetic reaction. Abnormal blushing, i.e., blushing in an inappropriate situation, can be emotionally disturbing.

V.V., female, unmarried, age 22, manifested this reaction. The exaggerated blushing brought about a condition not unlike erythrophobia. The client would blush during introduction to new persons, and the reaction would occur regardless of the sex of the new person. The reaction was so severe that she would break out with localized red spots on her arms and legs, and the face would become fiery red. Even a sudden unexpected meeting with an old friend would bring about the reaction. The client was disturbed by this adjustment pattern and sought help in "overcoming the pattern."

Interview and psychological testing results were within the range of normal expectancy, so that a course of therapy using hypnosis was suggested and accepted by the client. Seven hypnotic sessions were devoted merely to trance induction and deepening in order to acquaint the subject as much as possible with hypnotic phenomena. Progressive relaxation was utilized in the early sessions with stair-descent as the deepening procedure. When she had progressed to a point where hand anesthesia was attainable, suggestions were given for immediate deep trance induction by elevating the arm and allowing the therapist to bring it down to her lap.

For four sessions she was allowed to practice this technique, and, as the trance developed, it was suggested that she hallucinate a movie theatre where she could see and hear a musical show. The first two sessions were not completely successful, the client reporting that she "heard some music and saw some picture" but could not

successfully recall either. At the third session, the picture and sound were clear, and at the fourth session, ideomotor activity of the finger was introduced so that the end of the picture could be signaled.

At the next meeting, V.V. was allowed to see a movie of herself as a happy child, and laughter was brought forth by the "movie," and at the next session she saw a situation which made her blush. At this point suggestions were introduced to the effect that although she would still blush, she would not let it distress her, and to test the effects of the suggestion, no sessions were held for two weeks. Upon the client's return to the office, trance was induced and deepened, and the subject was told that the finger would elevate as a "yes" answer to interrogation. She was then asked if the profuse blushing began since she was 20 years of age, between 16 and 20 and finally between 11 and 15. At this point finger movement occurred. She was questioned then as to onset at age 11, 12, 13, and 14 where finger movement was again noted. To validate this age, she was asked if she was an eighth grade student (no movement) or a freshman in high school (movement). She was told to allow pictures to flash through her mind, and, when the picture which was the cause of her blushing appeared, the finger would move. When this occurred, the therapist intruded by pointing out that this picture was the reason why she started blushing. She was asked further if she wanted to relate the experience; if not, merely to shake her head. The answer was negative, and she began to cry. After a time lapse of about three minutes, the therapist suggested that since the reason for her blushing was now known, and that it was something related to teen-age experience, it was no longer necessary as an adjustment mechanism, that she no longer needed to blush inappropriately. Trance was then lightened with suggestions of good-feeling and happiness that she had now found the cause of her inappropriate blushing and that she would no longer be afraid of being embarrassed by excessive blushing.

In the five months which have followed, occasional contact with V.V., her fiancé, and members of her family reveal the fact

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that the recovery has continued and that inappropriate blushing no longer occurs. It is felt that the crux of this particular problem lies in taking the subject slowly

through various phases of hypnotic phenomena. In this way the learning can be assimilated and fixed so that the corrected behavior is reinforced.

### ACCELERATION OF LABOR BY HYPNOTIC SUGGESTION: A CASE REPORT

by Harry S. Fist, M.D.<sup>1</sup>

De Lee (1) states: "The contractions of the uterus are perceptible as early as the fifth week of gestation. They are painless, last from twenty seconds to a few minutes, and recur at irregular intervals. At labor they become regular, painful, and more powerful. They are involuntary, sometimes affected by the nervous condition of the woman. Contractions may continue post mortem, briefly."

That they are involuntary is accepted fairly generally by obstetricians today. It is believed that labor is initiated by endocrine factors, and it is supposed to be involuntary, as is the beat of the heart. Cases have been reported in which the heart could be slowed voluntarily and also some in which the force and rate of the heart beat were controlled under hypnosis (4).

All obstetricians have seen labor stop when the patient arrived at the hospital, and many times mental or physical shock has initiated premature labor.

It is the feeling of the author that the case here reported well illustrates the potentiation of uterine contractions by means of hypnotic suggestion. This is more apt to occur in multiparae, who know how labor feels. The author has been unable, in a number of primigravidae, to start labor by suggestion.

Analgesia during labor by hypnosis is fairly common. The use of hypnosis as a substitute for pitocin is very little known.

Mrs. D. G., a 25-year-old para II, had a fairly difficult time with her first two labors, which were characterized by weak, nagging pains throughout, followed by post partum hemorrhage. The first labor, in 1956, took 34 hrs. The second, in 1957, was much the same, lasting about 30 hrs. Low forceps were used in both.

The third baby was larger than either of the others. Contractions began the evening of March 16, 1959, and were still mild when the patient went to the Beverly Hills Doctors' Hospital at 4 a.m., March 17. The cervix was 70% effaced, dilated 2 cm., and the station was minus 3. Mild, nagging contractions continued during the night. At 8:30 a.m., dilatation was only 3 cm., the cervix thin and soft, and the station minus 2. Pains were nagging, but not severe.

The patient had been conditioned at the previous six visits to go into a trance on counting to ten. I asked her to do so at this time. Suggestion was then made that contractions would become harder, closer, and more effective and that the patient would not mind them but would relax with each one.

Contractions at once became harder and closer together. The patient complained a little about pain at the time, but later had almost complete amnesia.

At 9 a.m., just 30 min. later, contractions had increased enough to dilate the cervix the remaining 6 cm. Dilatation was complete and the head at a zero station. Epidural anesthesia was given, and the baby was delivered spontaneously. The puerperium was uneventful.

#### COMMENT

The author has often used hypnosis to shorten labor by effecting better relaxation of the cervix. It was enlightening to find that as far back as 1889 hypnosis had been successfully employed to stimulate uterine contractions.

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Bramwell (2) reported that Dr. Fanton of Marseilles in 1889 induced uterine contractions by suggestion, then arrested labor by the same means from 11 p. m. until midnight, reinstated contractions by the same means, and labor proceeded to a normal delivery. Dr. Fanton claimed to be able to cause uterine contractions to appear or disappear at will.

There is another report by Bramwell (2) that in 1891 von Schrenck-Notzing initiated uterine contractions by sug-

gestion under hypnosis. The contractions became so strong that rupture of the uterus was feared, and suggestion was used to slow them down.

Newbold (3) wrote: "It seems possible, in certain of the best subjects, actually to increase the strength of the uterine contractions by means of direct suggestions. There would appear to be no definite experimental confirmation of this, and the evidence rests largely upon clinical impressions."

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## ADDENDUM TO "HYPNOSIS IN PAINFUL TERMINAL ILLNESS"

by R. C. Schon, Ph.D.<sup>1</sup>

I wish to add an observation to Erickson's paper, "Hypnosis in Painful Terminal Illness" (Vol. 1, 1959, pp. 117-121, of this JOURNAL). All three patients he described were aware of their impending death. This was not so in a case recently referred to me by a physician, who gave me the following anamnestic data:

A 54-year-old woman was suffering from advanced carcinoma of the bowel, with metastases in the liver. Eleven months ago she began nursing her older sister, who suffered from the same illness, until that sister's death two months later. Two weeks after the patient's return to her husband she felt abdominal pains and underwent exploratory surgery, which revealed some pathology. Two months later, a second operation showed that a malignant process had spread throughout the abdomen.

Her husband and her physician decided

not to tell her that she was dying, and she accepted the diagnosis of ileitis. As she was rapidly losing weight and appetite, becoming weak, sleepless, and pain-ridden, she suggested that her physician try hypnosis on her. He called me in as a hypnotist. When he said that she was not consciously aware of being moribund and that I was not to tell her, I expressed doubt about her motivation to learn to go into trance. However, I accepted the challenge but specified that she take no drugs eight hours before my visit. I found her in bed in a collapsed "S" position, her forehead resting on her forearms. To my question why she thought hypnosis would help her she replied, "I understand that the hypnotized person surrenders her will to the hypnotist." I explained in some detail that a person in a trance may look like that to an outside observer, but that going into a trance is a learning process. We then talked about her bodily feelings and her family situation. She cried over her sister's ordeal, and I used this emotional release to ask her to uncurl as far as the dull, pulling ache in her abdomen and

<sup>1</sup> 120 Hillside Avenue, W., Toronto, Ontario.

thighs would permit. She rolled on her left side with her thighs still drawn close to her abdomen. Stressing heaviness and tiredness of her body while her mind remained awake and suggesting roughly the first three steps in autogenic training (repose, heaviness, warmth), I talked slowly to her for about six minutes. I paused when she resumed her collapsed "S" position because a wave of pain swept her for 3 min. 20 sec. She described her feelings to me, after which I resumed my suggestions. Gradually she uncurled and relaxed. I established lid catalepsy, and her breathing slowed, with emphasis on exhaling. After 20 minutes she aroused in pain and reported the following hallucinations:

1. "I was walking in a beautiful meadow, and in one of its corners there was, oddly enough, an oil painting of a cow stepping into a limpid pool. The purity and transparency of this painted pool was quite amazing." (I had observed that some pictures on the wall in her apartment were of the glossy, naturalistic, idyllic type.) I asked her whether during her "dream" she had been disturbed by the incongruity of the oil painting in the meadow and she replied: "No, only now do I find it odd. I enjoyed this dream thoroughly while it lasted."

2. "An elderly, good-looking woman with a serious face in a brown velvet dress was striding about with dancelike steps in an empty, carpeted room. She was unravelling a bale of brown lace. Gradually the lace filled the room, and I awoke afraid of being smothered by this lace." She said she still felt scared, but also exhausted, and that she wanted to sleep—would I please leave? I had been with her 55 min.

Her husband told me later that day that she had slept for two hrs. after my visit, much longer than usual, and that she had eaten with more appetite than heretofore. Much to his dismay, however, she had refused to continue with my treatment because it exhausted her.

#### COMMENT

Conscious awareness of impending death by the patient seems to be a prerequisite for help through hypnosis in

terminal illness. Unawareness points to excessive repression, to dread of reality. Many terminal cancer patients do not admit to being moribund. Because they dread death they cling to the illusion that they can get well again. Clandestinely, they grope for a miracle cure, and hypnosis, in popular belief, is just that. Unconsciously, however, they know that they have a fatal disease. During trance, to their horror, they find that this unconscious knowledge is laid bare. This they had not bargained for, and they will not let this knowledge pass into consciousness. Hence they reject hypnosis, either outright or by blocking at the next induction, because during trance they had felt helplessly exposed to the reality they find too threatening and too painful to face.

In this case "surrender of the will" probably means: "Here, doctor, cure me miraculously, but do not let me see lurking death." With her first hallucination she illustrates her dissociated attitude towards reality, her rejection of the chthonic realm: "A meadow? Yes, I accept it because grass and flowers cover the 'dirt.' A live cow? God forbid! It might dirty the water. Real water? No, it might become muddy. So let me have a painting rather than reality."

Her second hallucination turns into a nightmare because her unconscious confronts her with its knowledge of her impending death. The woman in brown is probably the image of her recently deceased sister, in the shape of a "weird sister." In that capacity the latter unravels the "dainty fabric of her life." It fills the room. There is no room left for herself. The convolutions of the brown lace may be a euphemistic symbol for the intestine.

## BOOK REVIEW

Milton J. Marmer, M.D. *Hypnosis in Anesthesiology*. Springfield, Ill.: Charles C. Thomas, 1959. Pp. xv + 142. Price not indicated.

By Milton H. Erickson, M.D.

The cover jacket of this monograph describes it as fully comprehensive and "as an **AUTHORITATIVE** and **RELIABLE** source of knowledge of the uses and applications of hypnosis in *anesthesiology, surgery, and obstetrics*." The content of the book is quite different. For example, on pp. 58-59 there is one brief paragraph of general comment on hypnosis in obstetrics, followed by four brief paragraphs offering possible suggestions and explanations that might be given to a patient during labor. Then on p. 67 the author, declaring that hypnosis is valuable in obstetrics, describes his own experience as limited, disparages hypnosis as impractical for the anesthesiologist, and then offers a single page of general comments on hypnosis, obstetrics, medication, and personality attitudes. This constitutes the coverage of hypnosis and hypnoanesthesia in obstetrics.

The rest of the book is of comparable quality. There are only 120 pages of text, yet the first 64 are spent on brief, inadequate and over-simplified accounts of material more properly found in general textbooks on hypnosis. For example, the general history of hypnosis is covered in 19 pages, the psychophysiology of hypnosis in 8 pages of general discussion, the psychological aspects of anesthesiology (a most important topic in this reviewer's opinion) are no more than dismissed in 4 pages, and the remaining 33 pages are devoted to a presentation of 27 items of general discussion concerning induction "methods" and "techniques" including over-simplified verbalizations, tests of hypnotizability, self-hypnosis, post-hypnotic signals and trance "awakening" and "termination." No one of the induction techniques is adequately described in this reviewer's opinion, and there is an overemphasis upon authoritarian techniques that is all-pervasive, even to the description of other techniques. Also, the author either overlooks or is unaware of

the psychological and physiological processes and experiential learnings of the subject that enter into the development of a trance. For example, the author (p. 52) confuses an ideosensory technique for a confusion technique and presents (p. 54) as an image projection technique a technique based primarily upon visual, auditory, and kinesthetic memories combined with ideosensory responses.

The fifth chapter, "Uses in Anesthesiology" (pp. 65-88) gives four good but brief statements on p. 65 of the indications for the use of hypnosis in anesthesiology followed by three pages of merely general comments. The rest of the chapter presents simple narrative accounts of various surgical procedures, uninformative about the use of hypnosis in anesthesiology, and more suitable for lay than professional reading.

"Hypnosis in Pediatric Anesthesia" (pp. 89-103) consists of six pages of general comments and eight pages of narrative case reports.

The chapter on "Hypnosis in Therapy of Pain States" is essentially one of generalities. Even though the author, at the beginning of his book, acknowledges his personal indebtedness to them, he fails to mention in the text the special work done in this field by two contributors to the literature and lists only one in the bibliography in this regard.

The final chapter, "Post-hypnotic Suggestion, Hypnosemantics, Difficulties, and Precautions," (pp. 113-120), constitutes no more than a partial recognition that these topics are worthy of discussion.

There is a bibliography of 143 items, which lacks many pertinent references and includes many that are irrelevant.

Since not every competent physician writes well, the medical publishing house with its editors and manuscript readers is obligated to see that the final product is grammatically correct and free from obvious errors. To the publisher's discredit, this book is marred by poor grammar and obvious contradictions and inconsistencies. In expressing his indebtedness to one physician, the author misspells the man's name.

An adequate book on hypnosis in anesthesiology still needs to be written.

## ABSTRACTS OF CURRENT LITERATURE

*Edited by Bernard E. Gorton, M.D.*

48. Dittborn, J. M., and Armengol, V. Expectation as a factor of sleep suggestibility: II. *J. Psychol.*, 1960, **49**, 113-116.

Experimental work with 20 normal subjects disclosed that "expectation as a personality factor may be defined as an attitude implying a different degree of awareness towards a given situation which will subsequently result in a given type of behavior." This was tested by a control group instructed only to verbalize "dormir" (to sleep) upon a light signal, while the experimental group were advised that they would become increasingly sleepy as the task was done. Positive results were obtained with this group. (M.H.E.)

49. Dittborn, J. M., and Armengol, V. An operational definition of somnambulist hypnosis. *J. Psychol.*, 1960, **49**, 117-121.

Experimental study of 7 normal subjects disclosed the importance of an expectation to be able to speak in the hypnotic trance without awakening, and this constitutes an essential consideration in the development of the somnambulistic trance. Various degrees and types of amnesia were also found among these subjects. (M.H.E.)

50. Dittborn, J. M., Gutiérrez, O., and Godoy, L. M. Sleep suggestibility test. *J. Psychol.*, 1960, **49**, 111-112.

Hypnotic suggestibility is measured by the number of stimuli noted without failure by the expectant subject in a soundproof booth assigned the waking task of verbalizing "dormir" (to sleep) upon perceiving a light signal. The non-expectant but hypnotically susceptible control subject will respond to light signals to a far greater degree. (M.H.E.)

51. Hernández-Peón, R., Dittborn, J., Borlone, M., and Davidovich, A. (Center Exper. Psych., Univ. Chile). Changes of spinal excitability during hypnotically induced anesthesia and hyperesthesia.

Although hypnosis is well established, the physiological mechanisms of the hypnotic state and their related sensory phenomena are far from clear. Hernández-Peón and Donoso have found that the magnitude of photic evoked potentials in the optic radiations of awake human subjects changed in response to previous verbal suggestions concerning the intensity of the expected photic stimulus. This striking observation led the cited authors to propose that certain hypnotic sensory phenomena might be explained, at least partially, by changes occurring as far down as second-order sensory neurons by centrifugal mechanisms controlling the sensory input to the brain. In the intact subject it is impossible to record uncontaminated electrical indexes of afferent impulses from those lower sensory neurons. However, it is possible to gain indirect evidence of tactile sensory inflow to the spinal cord by recording cutaneous reflexes. In young males, a forearm skin reflex evoked by a single square pulse of 0.1 msec. duration was recorded with cathode-ray oscilloscope. The amplitude of the evoked potentials was often reduced during the hypnotic state, and it was further reduced by verbally suggesting to the hypnotized subject complete anesthesia of the forearm. Reciprocally, during hypnotically suggested hyperesthesia the cutaneous reflex was enhanced. It is concluded that during hypnotic anesthesia and hyperesthesia excitability changes occur at the spinal level, and it is suggested that these changes probably involve the spinal internuncial system interposed between the dorsal root ganglion cells and the motoneurons. (From Abstracts, 21st Internat. Cong. Physiol., Buenos Aires, 1959, p. 124.)

52. Ullman, M., and Dudek, S. On the psyche and warts. II. Hypnotic suggestion and warts. *Psychosom. Med.*, 1960, **22**, 68-76.

Hypnosis was attempted in 62 patients with warts. Deep hypnosis was established in 15. Within a 4-week period after the therapeutic suggestion was given,



8 of these 15 patients showed complete remission of their warts, in contrast to the occurrence of 2 cures in the 47 patients who could not be deeply hypnotized. These findings suggest that the depths of hypnosis may play a significant role in facilitating the curative process in certain patients with warts. An initial observation period of 1 or 2 weeks before hypnotherapy served to control the factor of cures initiated from non-hypnotic contact with the patient; the relatively short time limit set for the observation of changes (2 weeks for the initial changes and 4 weeks for cure) tended to minimize the possibility of intermittent factors operating during the course of treatment. In none of the patients are any changes noted in the interval between the first interview and the initiation of the specific therapeutic procedure. (B.E.G.)

53. Lifshitz, K., and Blair, J. H. Polygraphic recording of a repeated hypnotic abreaction with comments on abreactive psychotherapy. *J. nerv. ment. Dis.*, 1960, 130, 246-252.

An experiment is reported in which a specific hypnotically induced abreaction of a traumatic experience in a clinically normal subject was repeated on 7 different occasions. Polygraphic recordings of respiration, GSR, heart rate, frontalis muscle activity, cheek temperature, and body movement indicated that there was a general decrease in autonomic and affective reactivity with succeeding repetitions of the abreaction. If sufficient time was permitted to relapse between abreactions there was a tendency toward the return of autonomic and affective reactivity. These results are taken to agree with the hypothesis that an abreaction may be considered to be a form of elicited conditioned response. (B.E.G.)

54. Klumbies, G. Erfahrungen mit der Ablationshypnose bei chronischen Schmerzzuständen. (Experiences with ablation hypnosis in the treatment of chronic pain.) *Dtsch. Gesundheitswes.*, 1959, 14, 2101-2106.

Hypnotic analgesia may be used in treatment of patients suffering from chronic attacks of pain. The author reports on the use of ablation hypnosis in the treatment of 23 patients suffering from chronic attacks of pain before leucotomy, after spinal cord operation, etc. Results obtained in 14 cases proved successful. The method, indications, and results of ablation hypnosis in individual cases are described in detail, and experiences gained during eight years of its application by the author and others at the Medical Polyclinic in Jena are summarized. Because of the considerable time needed for the procedure, ablation hypnosis is recommended as a last resort after all medical and surgical possibilities have been exhausted. (J. Hoskovec, Prague.)

55. Bolland, G. Experimentelle Untersuchung über die psychische Beeinflussbarkeit der Nierenfunktion in Hypnose. [Experimental study of the susceptibility of renal function to psychic influences in hypnosis.] *Z. Psychother. med. Psychol.*, 1957, 7, 109-116.

Micturition in man could be established as a conditioned reflex after combining it 16 times with the unconditioned stimulus of ingestion of fluid. Later the unconditioned stimulus could be largely replaced by the suggestion of fluid intake under hypnosis. When hypnotic suggestions of thirst and drinking, respectively, were made, renal clearance determinations showed corresponding effects on glomerular filtration rate and renal blood flow. When hypnotic suggestions of heavy physical exertion were given, decrease in renal blood flow, glomerular filtration, and sodium excretion were noted; these changes corresponded to what is observed during actual heavy physical exercise in man. Tubular renal function was also found to be subject to influence by the central nervous system in hypnosis. The implications of these findings for clinical renal disturbances of central origin are discussed. (B.E.G.)

56. Livshitz, L. S. A study of higher nervous activity in man under hypnosis and its significance in developing a treatment for alcoholism. [In Russian.] *Zh. vyssh. nervn. deiatel'.*, 1959, 9, 838-844.

The author studied the susceptibility to hypnosis of 43 subjects, including chronic alcoholics, neurotics, and normal subjects. He finds a relationship between

hypnotizability and the strength of internal inhibition in that high hypnotizability is related to weak internal inhibition; conversely, poor hypnotizability is thought to result from weak internal inhibition. New conditioned responses can be elaborated during hypnosis and later retained in the waking state. In the treatment of alcoholism, the conditioned aversion to alcohol should be periodically reinforced under hypnosis. (J. Hoskovec, Prague.)

57. Prill, H. J. Relief of labor pain through autogenic training. [In German.] *Psychotherapie*, 1956, 1, 165-177.

Autogenic training is found to be a useful method of analgesia during labor, particularly the beginning of cervical dilatation. In contrast to Read's method, autogenic training may lead to a total relaxation of both somatic musculature and autonomically innervated structures. For optimal results specially modified training procedures are necessary and a scheme for this is outlined. (B.E.G.)

58. Prill, H. J. Experiences with autogenic training in the treatment of cardiac neurosis. [In German.] *Psychotherapie*, 1956, 1, 177-179.

A brief clinical report of the treatment of a case of cardiac neurosis in which the patient was taught relaxation and was able to overcome his hypochondriacal fears. (B.E.G.)

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1. References should be listed at the end of articles, and items in the list should be referred to in the text by means of numbers in parentheses. The forms of citation for a book and an article are:

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Davis, L. W., and Husband, R. W. A study of hypnotic susceptibility in relation to personality traits. *J. abn. soc. Psychol.*, 1931, 26, 175-182.

The first and last pages of articles should be indicated. The number of a periodical should be indicated only if the pagination is not continuous through the volume (e.g., *Brit. J. med. Hypnot.*, 1952, 3, No. 4, 5-9.)

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